FAXPHONE 40
FAXPHONE 50

SERVICE MANUAL

Canon

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PREFACE

1 CAUTION IN USING THIS MAMUAL

This service manual is the combined service manual for FAXPHONE 40 (hereinafter described as FP40) and FAXPHONE 50 (hereinafter described as FP50). Therefore, the content for which "FP50" or "FP50 only" is described is the content exclusively applicable to FAXPHONE 50. Other contents are common to both FP40 and FP50. The unit as described in the text refers to both FP40 and FP50.

2 LIST OF DIFFERENCES

2.1 Function Differences

Table 1 List of Difference in Function

No.	Function	FP40	FP50
1	Cutter	No	Yes
2	Decurl	No	Yes
3	One-touch Dial	8 keys	16 keys
4	Delayed transmission	No	Yes

2.2 Differences in Major Parts

Table 2 List of Difference in Major Parts

No.	Name	FP40	FP50
1	SCNT Card Unit	HG1–3384	HG1–3235
2	OP. CNT Card Unit	HG1–3385	HG1–3236
3	Cutter	—	HA1–1204
4	Recording Gear Unit	HG1–3375	HG1–3376
5	Decurl Shaft Unit	—	HG1–3377

CHAPTER 1

OUTLINE

1 FEATURES

1.1 High volume and low price model

This facsimile loads the 100m (328 feet) thermal paper for the first time as the facsimile in the same price zone, and targets at small-sized businesses.

1.2 Auto dialing

One-touch dialing is available at up to 16 locations (FP50), up to 8 locations (FP40).

1.3 Auto cutter (FP50)

FP50 has a cutter although it is a low end model.

1.4 Decurl mechanism (FP50)

This mechanism reduces the tendency for rolled paper to curl up after it has been spread out.

1.5 Pictorial sign LCD (Liquid Crystal Diode)

A pictorial style LCD gives visual information to operators.

1.6 High speed transmission

9600 bps high speed transmission is available to decrease communication cost.

1.7 Convenience function

Convenience function include following: communication check, auto feeder, redial function, delayed transmission function (FP50), 16 shades halftone.

1.8 Connection of telephone answering machine

If the call is from a person, the fax lets the call go through to the answering machine where the person can leave a message.
If the call is from another fax machine trying to send a document, the fax receives the document automatically.

2 SPECIFICATION

2.1 Standard and ability

Table 1-2-1

No.	Item	Contents
1	Type	Transceiving
2	Configuration	Desktop
3	Document size	Max. 256 mm width Min. 148 mm width , 105 mm length
4	Document thickness	Sheet document : 0.06~0.13 mm
5	Automatic document feed	Letter / A4 : 10 sheets or fewer B4 : 5 sheets or fewer
6	Effective reading width	214 mm
7	Recording paper type	Letter : 216 mm width, 100 m length High density antistatic type paper
8	Effective recording width	214 mm (Letter / A4)
9	Recording paper stacker	Letter / A4 size : 10 sheets or less (FP50)
10	Communication density	Horizontal scanning : 8 pels / mm Vertical scanning : 3.85 lines / mm for standard : 7.7 lines / mm for fine
11	Transmission output level	0 ~ – 15 dBm (adjustable in increments of 1 dBm by Service Switch)
12	Reception input level	0 ~ – 43 dBm
13	Input / output impedance	600 Ω ± 30 % (0.3 ~ 3.4 KHz)
14	DC resistance	260 Ω or less
15	Transmission speed	16 sec. (9600 bps, CBT; transmission only) 30 sec. (9600 bps, MH)
16	Protocol speed	12 sec. before image 4 sec. between image 3.5 sec. after image
17	Fuse rating	Current : 4 Amp. Voltage : 125V
18	Power supply	AC85 ~ 132 V, 48 ~ 62 Hz
19	Power consumption	Standby: 10W ± 25%, Max.: 130W ± 15 %
20	Operation environment	Temperature : 5° ~ 35° C Humidity : 20% ~ 85 % RH

No.	Item	Contents
21	Storage environment	Temperature : – 20˚ ~ 60˚ C Humidity : 10% ~ 85 % RH
22	Maximum noise	30 dB in standby mode 55 dB in copy mode
23	Dimention	414.5 W x 368 D x 158 H (Unit: mm)
24	Weight	5.8 Kg (FP50) without paper 5.4 Kg (FP40) without paper

No.	Item	Contents
1	Reading method	Fixed flat-bed scanning with CCD
2	Halftone	16 levels with dither matrix
3	Recording method	Thermal recording (Heat sensitive paper)
4	Applicable line	Public switched telephone network
5	Communication system	Half-duplex
6	Minimum transmission time	Transmission : 20ms Reception : 20ms CBT communication : 0 ms
7	Modulation system	CCITT V.29 (9600/7200 bps) for image CCITT V.27 ter (4800/2400bps) for image CCITT V.21 (300bps) for handshake signal
8	Image compression method	MH CBT (Transmission only; 6 K bytes buffer)
9	Communication mode	CCITT G3
10	Error correction function	None
11	Auto-dial	One-touch speed dialing : 16 (FP50) : 8 (FP40)
12	Redialing	At 2 minute intervals for max. 2 times (The intervals and number of repetition are adjustable)
13	Polling	Transmission is available
14	Delayed transmission	12 ± 2 hours (Fixed timer; FP50 only)
15	FAX/TEL automatic switching	CNG (1100 ± 100 Hz) detection method
16	Answering machine	Available to connect
17	CI response time selection	Changeable by Service Data Switch

No.	Item	Contents
18	Transmitting terminal record	Records the telephone number, TTI, destination, and number of pages are recorded
19	LCD displays	16 digits for character 5 pictorial signs for indicate
20	Recording paper cut	Automatic cutting : 1 sheet (FP50) Manual cutting (FP40)
21	Main CPU	MPU HG52E14FD (64180 with G•A)
22	Main ROM size	1 M bit
23	Data storage memory	EEP-ROM (4K bytes)
24	Clock	None
25	Handset	Electronic telephone standard equipment (Calls cannot be made during power off)

Note: G•A ....Custom gate array IC tip

CHAPTER 2

OPERATING INSTRUCTIONS

1 EXTERNAL VIEW

1.1 External

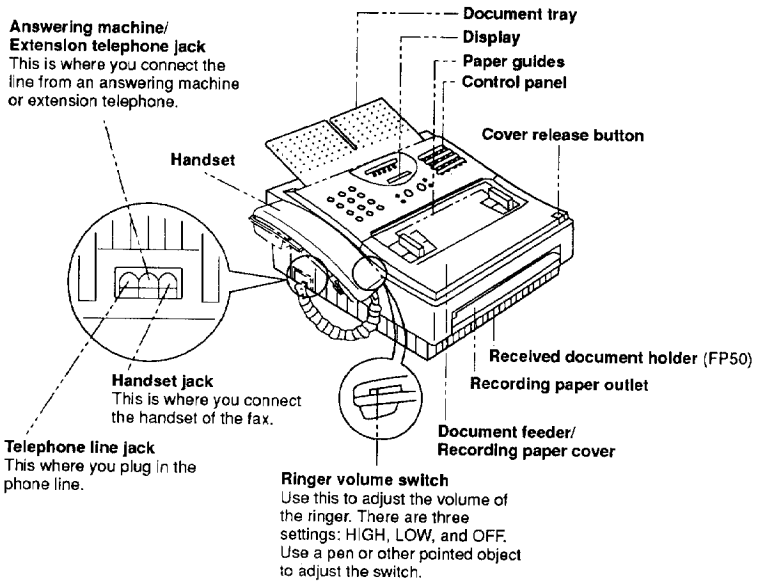

Answering machine/
Extension telephone jack
This is where you connect the line from an answering machine or extension telephone.
Handset
Handset jack
This is where you connect the handset of the fax.
Telephone line jack
This where you plug in the phone line.
Document tray
Display
Paper guides
Control panel
Cover release button
Received document holder (FP50)
Recording paper outlet
Document feeder/
Recording paper cover
Ringer volume switch
Use this to adjust the volume of the ringer. There are three settings: HIGH, LOW, and OFF. Use a pen or other pointed object to adjust the switch.

Fig. 2-1-1

1.2 Operation Panel

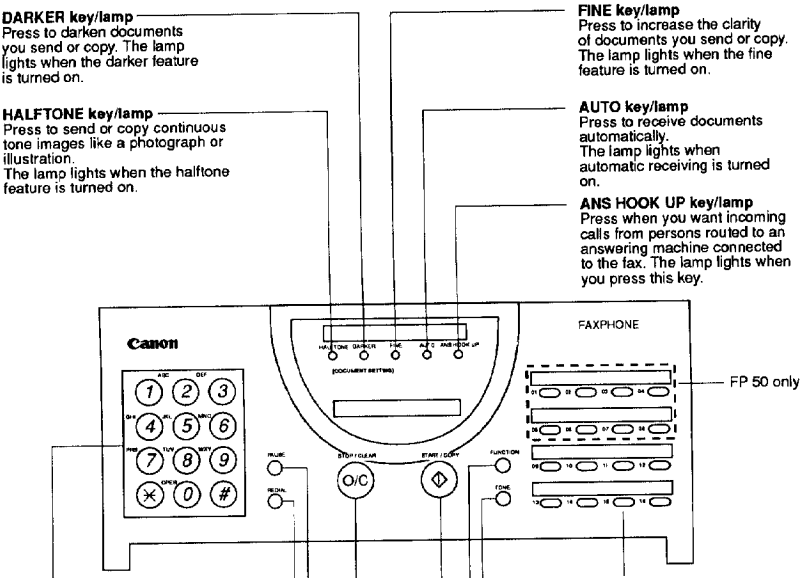

DARKER key/lamp
Press to darken documents you send or copy. The lamp lights when the darker feature is turned on.
HALFTONE key/lamp
Press to send or copy continuous tone images like a photograph or illustration.
The lamp lights when the halftone feature is turned on.
FINE key/lamp
Press to increase the clarity of documents you send or copy. The lamp lights when the fine feature is turned on.
AUTO key/lamp
Press to receive documents automatically.
The lamp lights when automatic receiving is turned on.
ANS HOOK UP key/lamp
Press when you want incoming calls from persons routed to an answering machine connected to the fax. The lamp lights when you press this key.
FAXPHONE
FP 50 only
Numeric keys
Use to dial numbers or register information. They work just like the keys on a touch-tone telephone.
REDIAL key
Press to redial facsimile or telephone numbers.
PAUSE key
Press to enter a pause when dialing or registering numbers.
STOP/CLEAR key
Press to stop an operation or clear a setting.
One-touch Speed Dialing keys
Press to dial One-touch Speed Dialing numbers. Also use to enter names when registering information. (The FP40 has 8 keys and the FP50 has 16 keys).
TONE key
Press to change temporarily from pulse to tone dialing.
FUNCTION key
Use with other keys when doing certain operations.
START/COPY key
Press to:
• Start an operation
• Complete registration
• Feed recording paper (FP40)
• Make copies.
• Cut recording paper (FP50)

Fig. 2-1-2

2 HOW TO OPERATE

2.1. Copying Operation

(1) How to Operate

(2) Remarks

1) To start copying, be sure to keep the handset in the on-hook status.
2) In copying, the resolution is forcibly fixed in the fine mode.
3) If the document is not fed to the DES position within about 10 seconds after the ADF operation is started, an error occurs.
4) If copying of one sheet of document takes more than 16 minutes, an error occurs. This can be changed by setting the Service Data Switch.

2.2 Dialing Method

2.2.1 Numeric-key Dialing

Dial with the numeric keys on the operation panel. (Handset must be in the Off-hook condition)

2.2.2 Redial

Manual:

When the [REDIAL] key is pressed, the last number dialed will be redialed.

Automatic: (Only when using one-touch speed dialing)

If the other party's fax is busy or does not answer, the fax waits two minutes and then automatically redials the same number.
While waiting to redial, the display shows the time left before the fax redials again.
To cancel automatic redialing, press [STOP/CLEAR] key or remove the document waiting to be sent.

2.2.3 One-touch Speed Dial

By pressing the one-touch speed dials (FP40: [01] - [08], FP50: [01] - [16]), you can dial the other party. The following items can be registered in each one-touch speed dial:

(1) Telephone No.: Maximum of 32 digits (including pause and space)

(2) ID of the receiving party: Maximum of 8 characters

(3) Transmitting mode (Start speed):
High-speed start.....Start transmission at 9600 bps.
Medium high-speed start.....Start transmission at 7200 bps.
Medium speed start.....Start transmission at 4800 bps.
Low speed start .....Start transmission at 2400 bps.

(4) Transmitting Mode (Echo measure)
Crush the first DIS (1850 Hz)
Crush the first DIS (1650 Hz)
Crush the first DIS (1100 Hz)

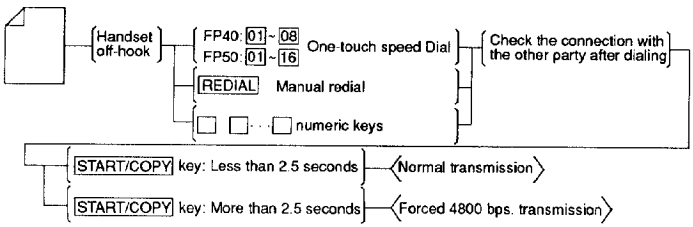
* Please refer Page 2-16.

2.3 Transmission

2.3.1 Transmission with a Handset (Manual Transmission)

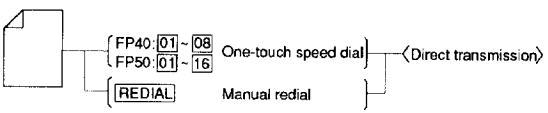
Press the START/COPY key after dialing by off-hooking the handset, and the facsimile executes the transmitting operation.

How to Operate



✳ When you keep pressing the START/COPY key, the beep sound rings when 2.5 seconds have passed, and indicates the mode switching.

2.3.2 Direct Transmission

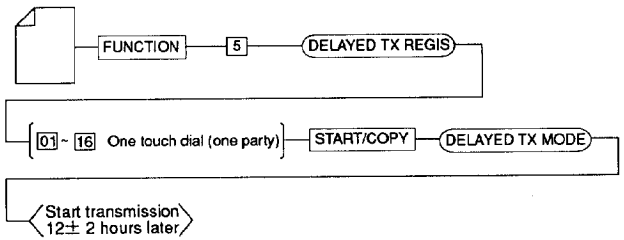


✳ You cannot dial with the numeric keys when the handset is in the on-hook condition.

2.3.3 Delayed Transmission (FP50)

This unit can transmit documents at a designated time (fixed at 12 ± 2 hours later) by using the timer communication function.

(1) How to Operate



* The transmitting destination is limited to parties registered on the one-touch speed dial buttons.

(2) How to Clear

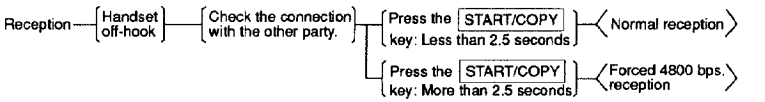
The timer transmission is cleared by opening the recording paper cover, and removing out the document.

The timer transmission is also cleared by pressing FUNCTION, 5, and STOP/CLEAR keys in that order.

2.4 Reception

2.4.1 Reception with the Handset (Manual Reception)

How to Operate


Reception
Handset off-hook
Check the connection with the other party.
Press the START/COPY key: Less than 2.5 seconds
Normal reception
Press the START/COPY key: More than 2.5 seconds
Forced 4800 bps. reception

* When you keep pressing the START/COPY key, a beep sounds after 2.5 seconds have passed, and indicates the mode switching.

2.4.2 Manual Reception Mode

By turning OFF the AUTO lamp with the AUTO key, this unit is set to the manual reception mode.
When there is an incoming communication in the manual reception mode, off hook the handset and check the signal of the other facsimile, and press the START/COPY key to switch to the receiving operation. At this time, the reception mode can be changed depending on how long the START/COPY key is pressed.

2.4.3 Automatic Reception

The AUTO lamp turns ON and the handset is on-hooked in the automatic reception mode. When the dialing signal is received, the unit automatically sends the responding signal, and receives the communication.

(1) Reception during the printing operation (copying, report printing, etc.) starts the automatic reception operation after printing is over.

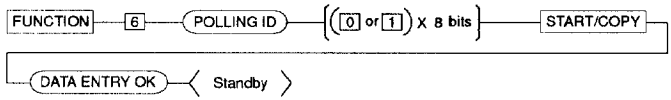
(2) Reception when the recording system has a trouble (when the recording paper cover is open, there is no recording paper, etc.), does not start the receiving operation.

2.5 Polling Wait

(1) This unit has only the polling wait (document transmitting) function, but cannot receive by polling.

(2) In order to carry out polling, the polling IDs of both the transmitter and receiver must match with each other.

Setting the Polling ID



Special Polling ID (Waiting side)

0 0 0 0 0 0 0 0 → Even if the polling IDs match, the documents are not transmitted.

1 1 1 1 1 1 1 1 → Even if the polling IDs do not match, the documents are transmitted when the polling command is received.

(3) The document reading mode is set by the waiting side.

(4) Setting the polling ID and setting documents are the only operations required.

2.6 FAX/TEL Automatic Switching

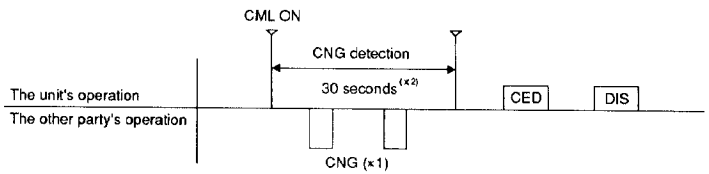
(1) Operating Conditions

- Set bit 1 of the User Switch1 to 1.
- Set to automatic reception (AUTO lamp turns ON).

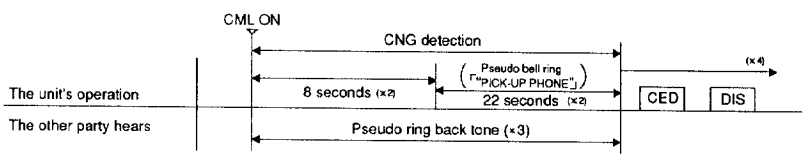
(2) Description

In this unit, the CNG detecting time is set for eight seconds after the CML relay is switched to the main unit. In the meantime, the pseudo ring back tone is output on the line.

A. When the other party is in the automatic transmitting mode (CNG sending) → The unit enters the FAX mode.



B. When the other party is in the telephone mode → The unit enters the telephone mode.



✳1 : When CNG is detected twice in the CNG detection time, the unit immediately enters the FAX mode.

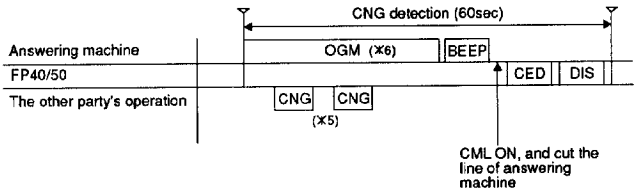
✳2 : This "CNG detection only" time and operater call time can be changed with bit 9, 8 of Service Switch 3.

✳3 : After CML is turned ON, the telephone fee is charged to the other party when the pseudo ring back tone is being sent.
Pseud ring back tone frequency can be changed with bit 7, 6 of Service Switch 3.

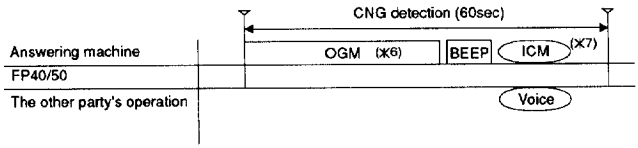
✳4 : If the other party's signal is detected within 35 ± 5 sec, reception begins.
If the other party's signal is not detected within 35 ± 5 sec, the fax returns to Standby.

C. When ANS HOOK UP lamp is ON.

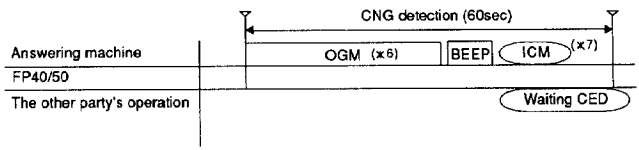
In case of the other party is auto TX fax.



In case of the other party is a person.



In case of the other party is manual TX fax. (No CNG fax)



※5: When CNG is detected twice in the CNG detection time, the unit waits carrier off then enters the FAX mode.
When OGM is sent, there are cases where CNG cannot be detected.

※6: OGM; Outgoing message

※7: ICM; Incoming message

2.7 Connection of Telephone Answering Machine.

(1) Operating Conditions
When the [ANS HOOK UP] key is pressed, the "ANSWERING MODE" display appears, and the telephone answering machine is connected.

(2) Description
When a call is received, the condition is the same as normal Standby mode, until the telephone answering machine OFF HOOK is detected. As soon as the telephone answering machine OFF HOOK is detected, the unit waits for the CNG from the other party. (Max: 60 sec.)

When the other party is an automatic transmission fax, (sending CNG),
→ CML ON, then enters manual reception.

When the other party is a telephone,
→ Operates as usual for a telephone answering machine.

* If the other party disconnects after the answering message has been sent, then normal telephone answering machine operation begins.

* Please refer page 2-10.

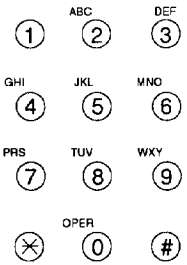
3 REGISTRATION OF VARIOUS DATA

3.1 How to Enter ID

The user's ID and telephone number and the other party's ID are registered in the following manner.

(1) Input of Alphabetic and Numeric characters
Alphabets and numerics are entered by the ten keys on the operation panel. As you press the same key each time, the character assigned to each key changes within the character string.

Layout of numeric Keys



1 : 1
2 : A → B → C → 2
3 : D → E → F → 3
4 : G → H → I → 4
5 : J → K → L → 5
6 : M → N → O → 6
7 : P → Q → R → S → 7
8 : T → U → V → 8
9 : W → X → Y → Z → 9
0 : 0
* : *
# : #

Example: When you press 2, the display changes A → B → C → 2.
When you press a different key, or move the cursor, the character is set.

(2) Lower case letters
After you select the alphabet with the numeric keys, press [02] of the one-touch speed dialing keys to change between the upper and lower cases.

(3) Cursor Movement and Space Input
When registering the ID, press one-touch speed dialing keys [03] and [04] to move the cursor.
[03] .....The cursor moves to the left.
[04] .....The cursor moves to the right.

Press the [08] one-touch speed dialing key to enter a space.

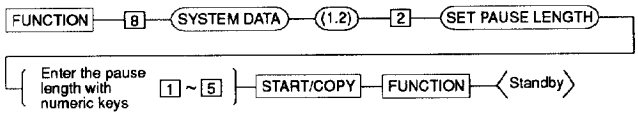
(4) Symbol Input
By pressing the one-touch speed dialing key [01], the symbols change in the following order (30 kinds).
[¥] → _ { | } : ; < = > ? ! " + $ % & ' ( ) • , − □ /∂ .

(5) Correction of Registration
Move the cursor to the character to be corrected, and enter a correct character.

3.2 Pause Key

Use the [PAUSE] key to enter a pause in the telephone number.

(1) Pause between Digits (Factory setting: 3 seconds)
When the pause key is used to insert an inter-digit pause in the telephone numbers, the pause length can be changed.
(Set time: 1~ 5 seconds)



(2) Last Pause
When a pause is added at the end of the telephone number, the pause length is fixed at 10 seconds.

3.3 Registration of the User's Data

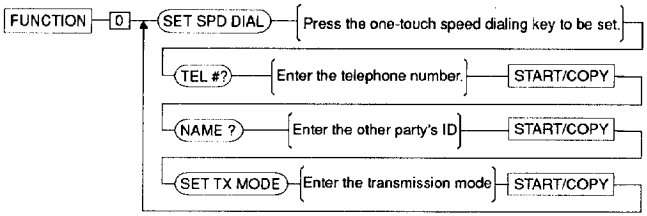
Various data can be registered by the following operations:

Table 2-3-1 Setting operation chart

Function	Remarks	Operation	Reference Page
User's telephone number setting		[F] [1] [ ] [ ] .... [START/COPY]	
User's ID setting (name setting)		[F] [2] input the user's ID by referring to table max 16 characters [START/COPY]	
Delayed transmission	FP50 only	Set document [F] [5] [1-touch] [START/COPY]	2-6
Polling ID setting		[F] [6] ([1] or [0]) × 8 bits [START/COPY]	2-8
User Switch setting		[F] [8] [1] ([1] or [0]) × 8 bits [START/COPY] [F]	2-17
Pause length setting		[F] [8] [2] ([1] ~ [5]) [START/COPY] [F]	2-14

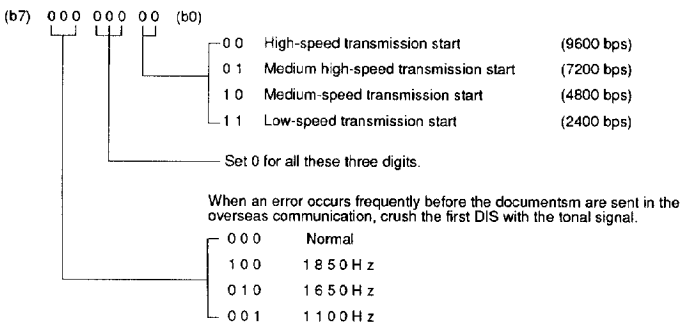
[F] : FUNCTION key pressed
[0] ~ [8] : Numeric keys pressed
[ ] : Numeric key pressed (arbitrary)
[1-touch] : One-touch dialing key pressed
[START/COPY] : START/COPY key pressed

Registration of One-touch Speed Dials [8 locations (FP40) / 16 locations (FP50)]



Press the FUNCTION key to return to standby.

Each bit of the TX MODE mean as follows:


(b7) 000 000 00 (b0)
00 High-speed transmission start (9600 bps)
01 Medium high-speed transmission start (7200 bps)
10 Medium-speed transmission start (4800 bps)
11 Low-speed transmission start (2400 bps)
Set 0 for all these three digits.
When an error occurs frequently before the documentsm are sent in the overseas communication, crush the first DIS with the tonal signal.
000 Normal
100 1850Hz
010 1650Hz
001 1100Hz

3.4 Registration of the User Switch

Press the [FUNCTION], [8] and [1] keys in order to enter the User Switch registration mode.
The bit functions of the User Switch are as follows:

```
SW1   00000010
      76543210
```

Table 2-3-2

Bit No.	Function	1	0	Factory Setting
7	not in use			0
6	not in use			0
5	not in use			0
4	not in use			0
3	not in use			0
2	Telephone number mark on the TTI output	FAX	☎	0
1	FAX/TEL automatic switching	Yes	No	1
0	Print activity report	Yes	No	0

Bit 2: Used to select the header mark to be added to the image during transmission.

Bit 1: At "0", the unit enters the FAX receiving operation in the automatic reception mode.
At "1", the unit executes the FAX/TEL automatic switching in the automatic reception mode.

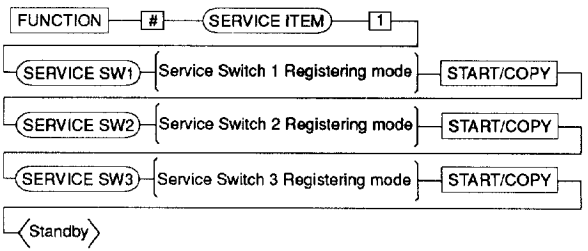
Bit 0: At "0", the activity report is not output.
At "1", the activity report is output after each communication has been completed.

Memorandum

4 ITEMS TO BE REGISTERED BY THE SERVICEMAN

4.1 Registration of Service Switch

Press the FUNCTION, # and 1 keys in order to enter the Service Switch registration mode (SW1 - SW3).



* After completing the setting, press the START/COPY key to register the setting.
* By pressing the FUNCTION key at any status during the Service Switch registration, you can return to Standby.

The bit functions of Service Switch are as follows:

SW1

0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Table 2-4-1

SERVICE SW1				
Bit No.	**Function**	**1**	**0**	**Factory Setting**
15	Error code output	Yes	No	0
14	not in use			0
13	not in use			0
12	Start speed	✳ 1		0
11				0
10	No. of DP pulse	✳ 2		0
9				0
8	DP make rate (%)	40	33	1
7	CBT prohibited	Yes	No	0
6	Echo measure (1100 Hz + CED)	Yes	No	0
5	not in use			0
4	not in use			0
3	not in use			0
2	not in use			0
1	NL	✳ 3		0
0				1

Bit 15 : At "0", the error code for serviceman is not output.
At "1", the error code for serviceman is output.

✳1 : Shows the start speed at transmission.
(Factory setting: 9600 bps)

Table 2-4-2
✳1 Start Speed

Start Speed	SERVICE SW1	
	bit 12	bit 11
9600 bps	0	0
7200 bps	0	1
4800 bps	1	0
2400 bps	1	1

✳2 : The number of pulse actually sent when connected to the dial pulse line.
(Factory setting: N)

Table 2-4-3
✳2 No. of DP Pulse

No. of DP Pulses	SERVICE SW1	
	bit 10	bit 9
N	0	0
N + 1	0	1
10 – N	1	0
N	1	1

✳3 : Sets the NL values
(Factory setting: 4dB)

Table 2-4-4
✳3 NL

NL	SERVICE SW1	
	bit 1	bit 0
0 dB	0	0
4 dB	0	1
8 dB	1	0
12 dB	1	1

SW2

1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Table 2-4-5

SERVICE SW2				
Bit No.	**Function**	**1**	**0**	**Factory Setting**
15	Signal output level (Signal ATT)	※4		1
14				0
13				0
12				0
11	not in use			0
10	not in use			0
9	Error after sending RTN	Yes	No	0
8	Set to STD mode (3.85 l/mm) after TX	Yes	No	0
7	Off-hook alarm prohibited	Yes	No	0
6	not in use			0
5	CNG sending prohibited	Yes	No	0
4	CED sending during manual transmission	Yes	No	0
3	DTMF output level (DTMF ATT)	※5		0
2				0
1				1
0				0

✳4 : Signal output level
(Factory setting: –10 dBm)

Note) The level actually sent to the line is the above-mentioned set value ± 2 dBm.

Table 2-4-6
✳4 Signal output level (dBm)

Signal ATT	SERVICE SW2			
	bit 15	bit 14	bit 13	bit 12
– 2	0	0	0	0
– 3	0	0	0	1
– 4	0	0	1	0
– 5	0	0	1	1
– 6	0	1	0	0
– 7	0	1	0	1
– 8	0	1	1	0
– 9	0	1	1	1
–10	1	0	0	0
–11	1	0	0	1
–12	1	0	1	0
–13	1	0	1	1
–14	1	1	0	0
–15	1	1	0	1
–16	1	1	1	0
–17	1	1	1	1

✳5 : DTMF output level
(Factory setting: low –6dBm, high –4dBm)

Note) The level actually sent to the line is the above-mentioned set value ± 2 dBm.

Table 2-4-7
✳5 DTMF output level (dBm)

DTMF ATT		SERVICE SW2			
low	high	bit 3	bit 2	bit 1	bit 0
– 4	– 2	0	0	0	0
– 5	– 3	0	0	0	1
– 6	– 4	0	0	1	0
– 7	– 5	0	0	1	1
– 8	– 6	0	1	0	0
– 9	– 7	0	1	0	1
–10	– 8	0	1	1	0
–11	– 9	0	1	1	1
–12	–10	1	0	0	0
–13	–11	1	0	0	1
–14	–12	1	0	1	0
–15	–13	1	0	1	1
–16	–14	1	1	0	0
–17	–15	1	1	0	1
–17	–15	1	1	1	0
–17	–15	1	1	1	1

SW3

0	0	0	0	0	1	0	0	0	0	0	1	0	0	1	0
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

Table 2-4-8

SERVICE SW3				
Bit No.	**Function**	**1**	**0**	**Factory Setting**
15	not in use			0
14	not in use			0
13	Language for each country	✳6		0
12				0
11				0
10				1
9	FAX/TEL switching "CNG detection only" time and operator call time	✳7		0
8				0
7	Pseudo RBT (Ring back tone)	✳8		0
6				0
5	Retraining error measure (during reception)	✳9		0
4				1
3	Retraining error measure (during transmission)	✳10		0
2				0
1	Prescan restriction	Yes	No	1
0	CED sending after reception within 2 seconds (For European regulation)	Yes	No	0

✳6 : Selection of the language used
(Factory setting: English)

Table 2-4-9
✳6 Language for Each Country

Language	SERVICE SW3			
	bit 13	bit 12	bit 11	bit 10
English	0	0	0	1
French	0	0	1	0
Spanish	0	1	0	0

✳7 : Setting of the "CNG detection only" time and Operator call time
(Factory setting:
CNG detection only; 8 seconds,
Operator call; 22 seconds)

*CNG detection is also performed during operator call time.

Table 2-4-10
✳7 "CNG detection only" time - Operator call time

CNG detection only	Operator call	SERVICE SW3	
		bit 9	bit 8
8 seconds	22 seconds	0	0
8 seconds	15 seconds	0	1
15 seconds	15 seconds	1	0
8 seconds	22 seconds	1	1

✳8 : Pseudo RBT frequency
(Factory setting: 16 Hz)

Table 2-4-11
✳8 Pseudo RBT

Pseudo RBT	SERVICE SW3	
	bit 7	bit 6
16 Hz	0	0
25 Hz	0	1
50 Hz	1	0
16 Hz	1	1

✳9 : Retraining error measure at reception
(Factory setting: 100 msec)

Table 2-4-12
✳9 Retraining error measure at reception (Echo monitoring time after CFR sending)

Time	SERVICE SW3	
	bit 5	bit 4
20 msec	0	0
100 msec	0	1
300 msec	1	0
600 msec	1	1

✳10 : Retraining error measure at transmission
(Factory setting: 75 msec)

Table 2-4-13
✳10 Retraining error measure at transmission (Time from the CFR reception to retraining sending)

Time	SERVICE SW3	
	bit 3	bit 2
75 msec	0	0
95 msec	0	1
175 msec	1	0
475 msec	1	1

4.2 Registration of Service Data

Press the [FUNCTION], [#] and [6] keys to enter the Service Data registration mode.

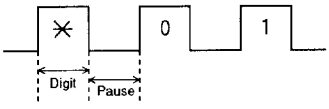
Table 2-4-14 Service Data

No.	Item	Contents	Factory Setting	Setting Range	Remarks
1	CI RESPONSE	The time from detecting the call signal (CI signal) to reception by this unit	3 sec	0-30 seconds	
2	1 PAGE TIME OUT	Maximum communication time per page in transmission and reception	16 minutes	8-64 minutes	Note 1
3	T1 TIMER SET	Signal waiting time after T1 timer has elapsed	0 seconds	0-50 seconds	Note 2
4	# OF REDIALS -FAX	No. of redials for FAX	Twice	0-10 times	
5	REDIAL TIMER -FAX	Redialing interval for FAX	2 minutes	1-5 minutes	
6	DTMF digit	DTMF digit time	70mS	50-100mS	Note 3
7	DTMF pause	DTMF pause time	70mS	50-250mS	
8	BT DETECT TIME-H	Busy tone detection time - high level	550mS	200-800mS	Note 4
9	BT DETECT TIME-L	Busy tone detection time - low level	180mS	50-450mS	

Note 1
- When sending a photograph in halftone or transmitting or receiving a document with a lot of information, the time per page may be insufficient at 16 minutes, leading to an error. In such a case, extend this value.

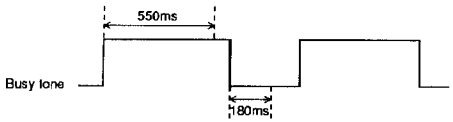
Note 2
- If this time is set at 10 seconds, for example, the T1 timer after auto dial becomes 35 seconds + 10 seconds = 45 seconds.

Note 3
- DTMF digit / pause

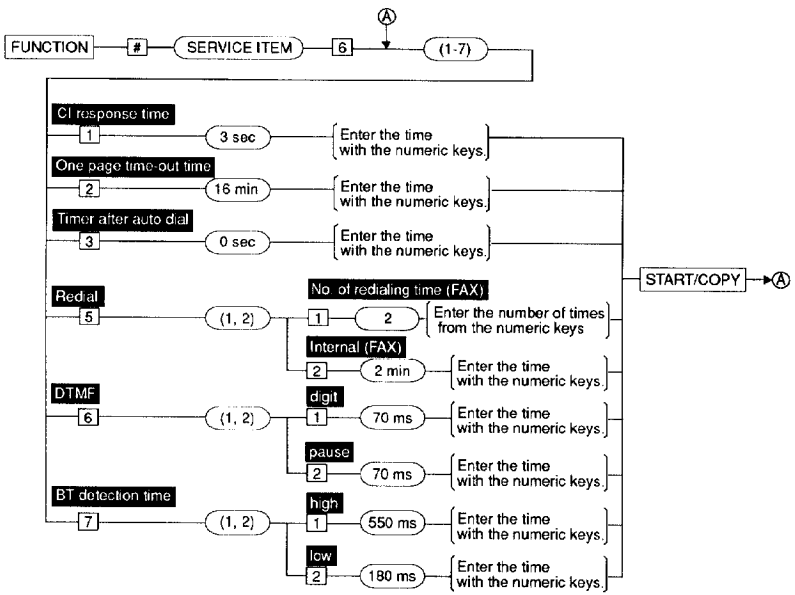


Note 4

- The factory setting may be illustrated as shown below.



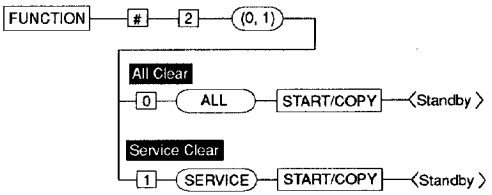
How to operate



✳ After completing the setting, press the START/COPY key to register the setting.

✳ By pressing the FUNCTION key at any status during the Service Data registration, you can return to Standby.

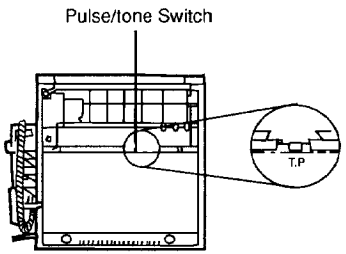
4.3 Clear Mode



※ All clear deletes all data except the Hard Switch, and sets to the factory setting.
※ Service mode clear deletes all the items of 4 ITEMS TO BE REGISTERED BY THE SERVICEMAN, and sets to the factory setting.

5 HARD SWITCH

Exterior (Bottom of the Unit)



T ---For touch-tone systems
P ---For rotary pulse systems (10pps)

Fig. 2-5-1

6 VARIOUS LISTS / REPORTS

Various lists and reports output by this unit are as follows: The output samples are shown from the next page onward.

Table 2-6-1

No.	Type of List/ Report	Contents	Output Operaton	Remarks
1	One-touch speed dial list	The telephone numbers and IDs of the other parties registered under the one-touch speed dials	FUNCTION ✳ 1	
2	User's data list	The user's ID, user's TEL, pause length, polling ID and User Switch setting information	FUNCTION ✳ 2	
3	Service data list	The data list for service man including the User Switch, Service Switch, ROM information and Service Data setting	FUNCTION ✳ 5	
4	Activity report	Communication mode, telephone number and ID of the other party, communication time, number of pages, and error code	Output each time a communication is completed	Note 1
5	Report after redialing fails	Connection telephone number and ID of the other party	When connection cannot be made. (The line is busy or no answer)	Note 2

Note 1 Only output when User Switch bit 0 = 1.
(When the unit is unable to print, all activity reports are cancelled)

Note 2 Only when sending documents.
(The fax tries to redial another party but still cannot make a connection)

(1) ONE-TOUCH SPEED DIAL LIST

The one-touch speed dial can be registered for 8 locations (FP40) and 16 locations (FP50).

```
* 1-TOUCH SPEED DIAL LIST *

01 :                    111 222 3333        Canon 1
02 :                    222 333 4444        Canon 2
03 :                    333 444 5555        Canon 3
04 :                    444 555 6666        Canon 4
05 :                    555 666 7777        Canon 5
06 :                    666 777 8888        Canon 6
07 :                    777 888 9999        Canon 7
08 :                    888 999 0000        Canon 8
09 :                    999 000 1111        Canon 9
10 :                    000 111 2222        Canon 10
11 :                                                  } FP50
12 :                                                  } only
13 :                                                  } only
14 :                                                  } only
15 :                                                  } only
16 :                                                  } only
```

(2) USER'S DATA LIST

```
        * USER'S DATA LIST *

USER'S ID                              Canon INC.
USER'S TEL                                 03 3758 2111
SYSTEM DATA
  1.    PAUSE LENGTH                         3 SEC
POLLING ID                             00000000
USER'S SOFT SW
  (SW1)      (b7) 00000010 (b0)
    b0  ----------  PRINT TX/RX REPORT          YES/NO      = 1/0
    b1  ----------  FAX/TEL AUTO SWITCH        YES/NO      = 1/0
    b2  ----------  SYMBOL NEXT TO TTI TEL #   FAX/☎       = 1/0
    b3 → b7    ----  OUT OF USE
```

(3) SERVICE DATA LIST (User's Data + Service Data)

```
        * USER'S DATA LIST *

USER'S ID                              Canon INC.
USER'S TEL                                03 3758 2111
SYSTEM DATA
  1.   PAUSE LENGTH                          3 SEC
POLLING ID                             00000000
USER'S SOFT SW
  (SW1)      (b7) 00000010 (b0)
    b0  ----------  PRINT TX/RX REPORT          YES/NO        = 1/0
    b1  ----------  FAX/TEL AUTO SWITCH         YES/NO        = 1/0
    b2  ----------  SYMBOL NEXT TO TTI TEL #    FAX/☎         = 1/0
    b3 → b7    ----  OUT OF USE
ROM VERSION
        VERSION :  (U02-01)              DATE :  (06/17)
SERVICE DATA
        1.  CI RESPONSE                                3   SEC
        2.  1 PAGE TIME OUT                           15   MIN
        3.  T1 TIMER AFTER AUTO DIAL                   0   SEC
        4.  NO. OF REDIAL (FAX)                        2
            REDIAL TIMER-FAX                           2   MIN
        5.  DTMF (DIGIT)                              70   ms
                 (PAUSE)                              70   ms
        6.  BT(HIGH)DETECT TIME                      550   ms
            BT(LOW) DETECT TIME                      150   ms

SERVICE SW
        (SW1)      (b15) 0000000100001001 (b0)
        (SW2)      (b15) 1010000000000011 (b0)
        (SW3)      (b15) 1000010000010010 (b0)

TONE/PULSE
                        1
                   TONE/PULSE          = 1/0
DIP_SW ※ See next page
            (b7) 00000000 (b0)
    b0  ----------  EC/JPN.USA          = 1/0
    b1  ----------  CARD-AGING/NO       = 1/0
    b2  ----------  DATA REG./NO        = 1/0
    b3  ----------  B4/A4-WRITE         = 1/0
    b4  ----------  CF-CL/CM            = 1/0
    b5  ----------  B4/A4-READ          = 1/0
```

* The items on DIP SW in the service data list depend on the SCNT setting. The data cannot be changed. b4 = "0" shows FP50 and "1" shows FP40. Other bits are not related with 120V mode.

(4) ACTIVITY REPORT

The activity report is output each time a communication is completed. The output can be prohibited by the User Switch.

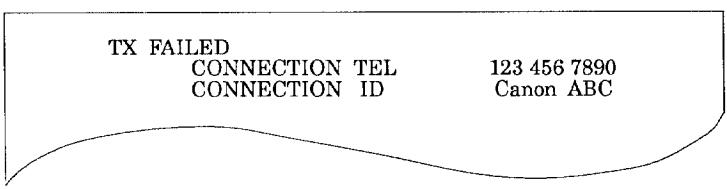
* ACTIVITY REPORT *

03 3758 2111 Canon INC.

MODE	CONNECTION TEL	CONNECTION ID	USAGE T	PAGES
TX G3	123 456 7890	Canon ABC	00 ' 40	01(00)

(5) REPORT AFTER REDIALING FAILS

If the fax tries to redial another party but still cannot make a connection because the line is busy or there is no answer, it prints out the following type of report.



CHAPTER 3

INSTALLATION

1 TABLE OF SETTING PROCEDURE

The following table shows the setting procedure.
For details of the procedure, refer to the reference page.

Table 3-1-1

Procedure	Contents	Supplementary Description	Reference page
1	Before installation	Open the package, and check the accessories.	3-2
2	Operation check	Set the recording paper	3-3
		Check the copying operation	3-3
3	Basic connection	Connect the handset	3-4
		Connect the extension telephone set	3-4
4	Basic setting	Set the hard switch	3-5
		All clear	3-5
5	Line connection	Connect to the telephone line.	3-6
6	Communication test	Transmit or receive a document for operation check.	3-7
7	Adjustment	ATT	3-8
		NL	3-9
8	Registration of various data		Chapter 2

1 TABLE OF SETTING PROCEDURE

The following table shows the setting procedure.
For details of the procedure, refer to the reference page.

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		All clear	3-5
5	Line connection	Connect to the telephone line.	3-6
6	Communication test	Transmit or receive a document for operation check.	3-7
7	Adjustment	ATT	3-8
		NL	3-9
8	Registration of various data		Chapter 2

2 BEFORE INSTALLATION

2.1 Caution

1. Be sure to plug in or out the power cord after the interval of 3 seconds and over.

2.2 Check Package Contents

Main unit (with the power cord) 1
Tray 1
Recording paper (LTR, 10m) 1
Modular jack cord 1
Handset 1
Destination label 1
Instruction manual 1
Registration card 1
Data sheet 1

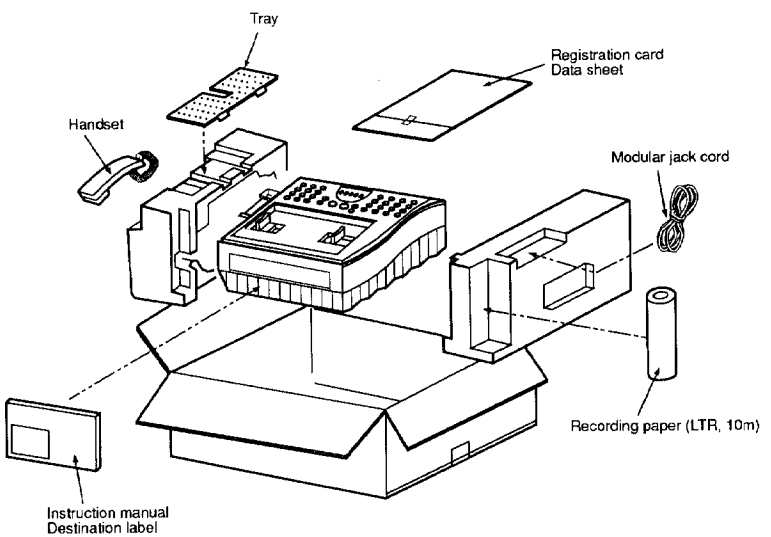
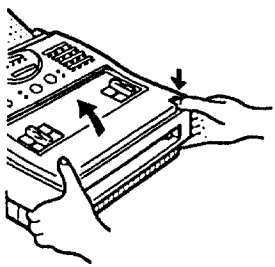


Fig. 3-2-1

3 OPERATION CHECK

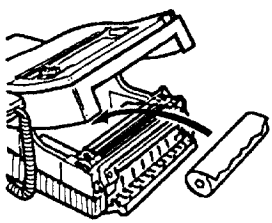
3.1 Recording Paper Setting

Press the cover release button, and open the recording paper cover.



Set the LTR recording paper.

Close the recording paper cover.



3.2. Test Copying

1. Plug the power cord to the outlet.
2. Execute the copy function according to the following procedure, and check that operation and image are normal.

3. Pull out the power cord from the outlet.

4 BASIC CONNECTION

4.1. Connection of Handset

Connect the handset to the main facsimile unit.

4.2. Connection of the Extension Telephone Set

Connect the modular jack of the extension telephone set to the main facsimile unit.

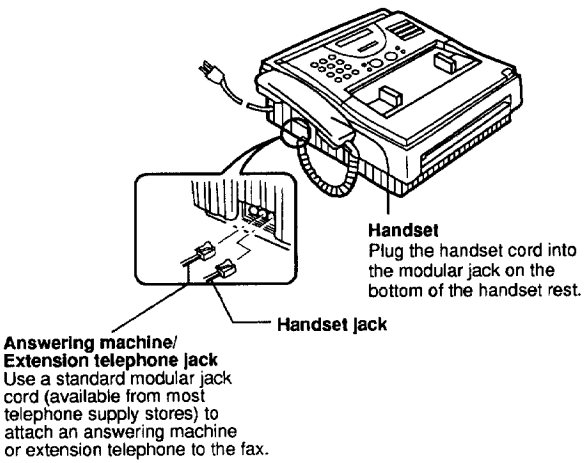

Handset
Plug the handset cord into the modular jack on the bottom of the handset rest.
Handset jack
Answering machine/ Extension telephone jack
Use a standard modular jack cord (available from most telephone supply stores) to attach an answering machine or extension telephone to the fax.

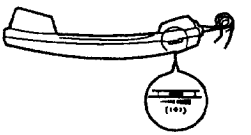
Fig. 3-4-1

5 BASIC SETTING

5.1. Hard Switch

5.1.1 Setting of the Handset Ringer Volume

The calling volume of the handset can be set in three stages.



HIGH . . .Ringer volume: high
LOW . . . Ringer volume: low
OFF . . . Mute the ringer

Fig. 3-5-1

5.1.2. Setting of the Dialing Method

Set the dialing method with the sliding switch on the bottom of the unit.

P .... For rotary pulse systems.(10pps)
T .... For touch-tone systems.

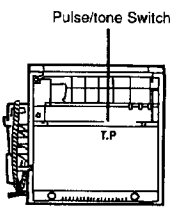
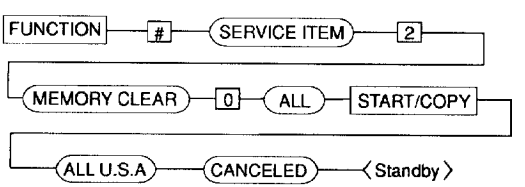


Fig. 3-5-2

5.2. All Clear

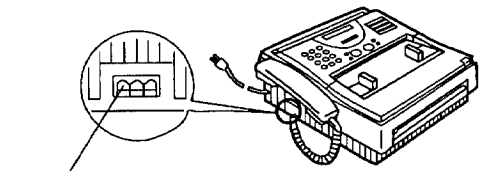
5.2.1. Plug the power cord in to the outlet.

5.2.2. Execute All Clear in the following procedure



6 LINE CONNECTION

Connect the modular jack cord to the main unit.



Telephone line jack
Use the included modular jack cord to attach the fax to the phone line.

Fig. 3-6-1

Caution: This unit does not require to match the line polarity. Polarity registration is not necessary, either.

7 COMMUNICATION TEST

Execute transmission/ reception and check that operation and image are normal.

When there is a trouble in communication or image, refer to [8] ADJUSTMENT, or CHAPTER 4: REPAIR.

8 ADJUSTMENT

8.1. ATT (Signal output level, Factory setting: –10dBm)

Adjust ATT with bit 15, 14, 13 and 12 of Service Switch 2.

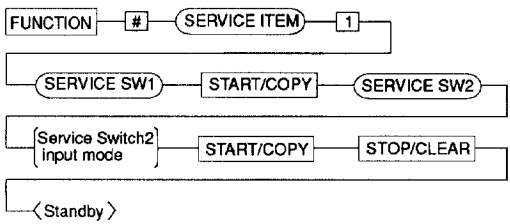


Table 3-8-1 ATT Setting

ATT	SERVICE SW2				ATT	SERVICE SW2			
(dBm)	bit 15	bit 14	bit 13	bit 12	(dBm)	bit 15	bit 14	bit 13	bit 12
–2	0	0	0	0	–10	1	0	0	0
–3	0	0	0	1	–11	1	0	0	1
–4	0	0	1	0	–12	1	0	1	0
–5	0	0	1	1	–13	1	0	1	1
–6	0	1	0	0	–14	1	1	0	0
–7	0	1	0	1	–15	1	1	0	1
–8	0	1	1	0	–16	1	1	1	0
–9	0	1	1	1	–17	1	1	1	1

8.2. NL (Factory setting: 4 dB)

Adjust NL with bit 1, 0 of Service Switch 1.

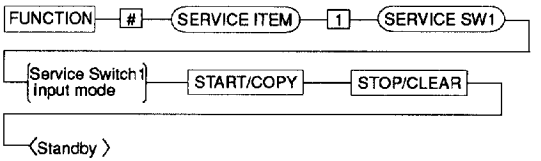


Table 3-8-2 NL Setting

NL	SERVICE SW1	
	bit 1	bit 0
0 dB	0	0
4 dB	0	1
8 dB	1	0
12 dB	1	1

9 CAUTION

9.1. Caution

Facsimile is the equipment susceptible to the damage by lightning as it is connected to the power and telephone lines.

9.1.1. Induced Voltage of Lightning

When the lightning directly hits the telephone line or the ground, high voltage is induced to the telephone line. That voltage may enter the facsimile from L1 and L2 of the NCU circuit and damage the unit.

9.1.2. How to Reduce Damage by Lightning

If lightning is near, unplug the facsimile, and refrain from using it as much as possible. (High voltage may enter the facsimile from the power cord.)

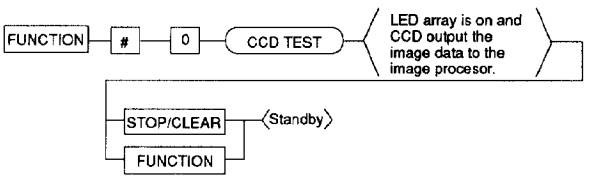
CHAPTER 4

REPAIR

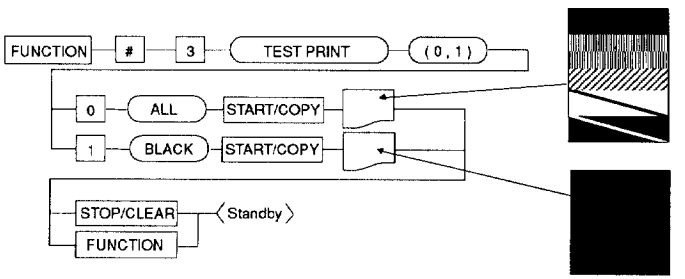
1 TEST MODE

All of symbols and keys mean as same as CHAPTER 2: OPERATING INSTRUCTIONS.

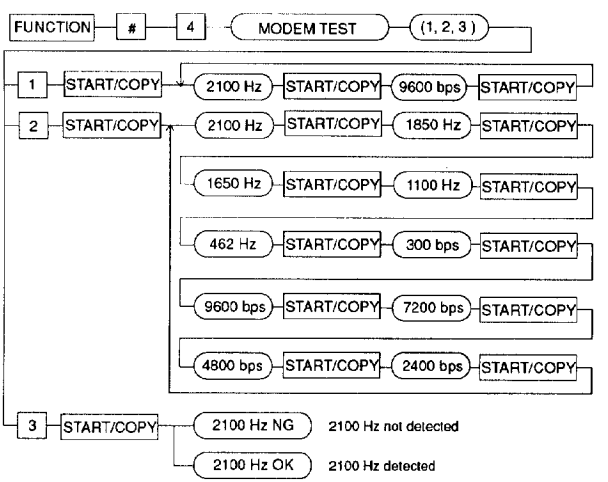
1. CCD TEST



2. TEST PRINT

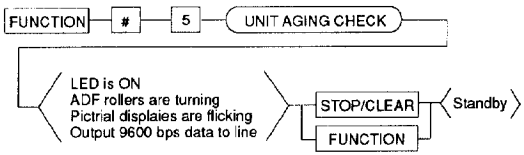


2. MODEM TEST

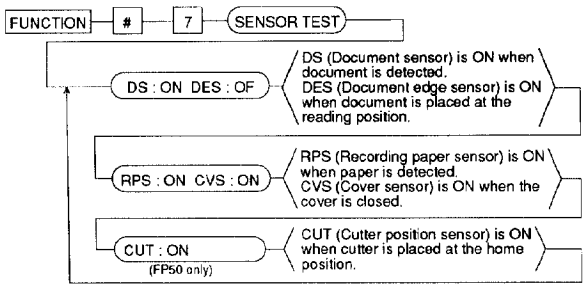


By pressing either STOP/CLEAR or FUNCTION keys twice at any time during the MODEM TEST, you can return to Standby.
Modem testing cannot be done using the machine itself, (as it does not have a speaker). The sound can be heard through the handset of another party's telephone.

4. UNIT AGING CHECK

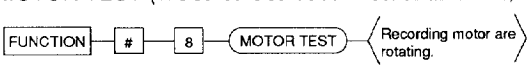


5. SENSOR TEST


FUNCTION
#
7
SENSOR TEST
DS : ON DES : OF
DS (Document sensor) is ON when document is detected.
DES (Document edge sensor) is ON when document is placed at the reading position.
RPS : ON CVS : ON
RPS (Recording paper sensor) is ON when paper is detected.
CVS (Cover sensor) is ON when the cover is closed.
CUT : ON
(FP50 only)
CUT (Cutter position sensor) is ON when cutter is placed at the home position.

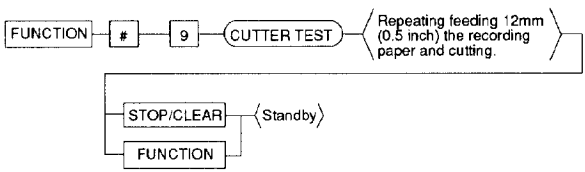
By pressing the STOP/CLEAR or FUNCTION key at any time during the SENSOR TEST, you can return to Standby.

6. MOTOR TEST (The sensor's contidition must be as follows; CVS: OFF, RPS: OFF)

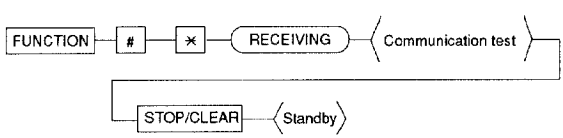


By closing the Recording paper cover or setting the Recording paper, you can return to Standby.

7. CUTTER TEST



8. RECEIVING TEST



For factory use.
This test is not for back to back connection.

2 ERROR DATA

The error code chart given here is not restricted exclusively to this unit, but can be used for other Canon facsimiles as well. Hence error codes not relevant to this machine are present.

2.1 Error code for user

Code	Cause	Remedy	Location	
			TX	RX
#001	Document jam in the ADF unit.	Insert document once again. Use a document cover if the sheet is not standard size.	Yes	
#003	Max. time allowed to transmit or copy one page was exceeded.	Make a photocopy and divide it up before transmitting or copying. Or reset the one page timeout with the Service Switch.	Yes	
#005	Receiving machine is not G3/G2, or did not respond within 45 seconds. (This error will occur if the receiver is in manual reception mode and set for Phase B timeout.)	Check the communication mode of the receiver. If the receiver is not G3/G2, communication is not possible.	Yes	Yes
#008	Polling error generated by difference in ID numbers.	Contact receiver and correlate ID numbers.	Yes	
#009	Paper jam during reception or copying, or paper ran out.	Check recording paper.		Yes
#012	No recording paper at the receiving machine during transmission.	Contact receiver and have recording paper loaded.	Yes	
#042	"Check cutter"			Yes

2.2 Error code for serviceman

2.2.1 Abnormal Detection Error Codes

Code	Cause	Location TX	Location RX
##050	The thermal head temperature rose abnormally.		Yes
##053	The motor overheated.	Yes	Yes

2.2.3 G3 Mode Error Codes

Code	Cause	Location TX	Location RX
##100	Excessive command retransmission (three times). Normal completion when the receiver does not respond after reception of EOP, and the MCF is transmitted.	Yes	Yes
##101	Receiver mode speed was not compatible.	Yes	
##102	Fallback impossible. FTT is received in training check, but CFR is not received despite two checks at 2400 bps.	Yes	
##103	EOL cannot be detected after five seconds. (In excess of one-line maximum transmission time) EOL is not detected for fifteen seconds during CBT mode.		Yes
##104	RTN received.	Yes	
##105	Burst error for more than 40 lines in horizontal scanning data.	Yes	Yes
##106	Commands cannot be received for six-second intervals during command reception (other than ##292, ##293, and ##294).		Yes
##107	Transmitter cannot fall back (On 2400 bps reception, RTN or FTT is sent, and DCN is received.)		Yes
##109	Since a binary signal other than DIS, DTC, CFR or FTT is received after DCS transmission, excessive command retransmission occurs.	Yes	
##200	Carrier is not detected for six seconds. (Non-signal status continued for more than six seconds. This is ignored for ten seconds after entering image reception.)		Yes
##201	DCN is received in other than normal binary procedure.	Yes	Yes

Code	Cause	Location	
		TX	RX
##264	The image signal was not accurately received within 10 seconds after entering image reception. (Retraining error/modem misoperation)		Yes
##288	Signals other than those expected were received after EOP transmission.	Yes	
##289	Signals other than those expected were received after EOM transmission.	Yes	
##290	Signals other than those expected were received after MPS transmission.	Yes	

3 TROUBLESHOOTING

This section describes the main causes of failure, and appropriate counter measures. the actual causes or counter measure may be different from those described.

3.1 Preface for troubleshooting

3.1.1 How to use the troubleshooting tables

e.g.) LCD does not display at all.

Table 4-3-1

Cause	Step	Check Item	Result	Counter measure
OP. CNT card	1	Remove J16 connector cable on the SCNT card, then turn power on. Does the unit makes a short beep tone?	Yes	Reconnect J16 or replace OP. CNT card.
SCNT card	2	When power on does the second display from the top faintly display square marks?	Yes	Replace SCNT card
Check for branching	3	Has the power supply fuse blown?	Yes	Replace the fuse , then Go to step 4
Power supply unit	4	Check the power supply output. Is the measurement value within the the tolerable range? For the method of checking, refer to unit replacement.	No	Reconnect J7 connector or replace the power supply unit.
Power line condition			Yes	Check the grounding of power. Recommend to relocate the unit.

The above table shows that the cause of "LCD does not display at all" may be a problem with either OP. CNT card, SCNT card, fuse, power supply unit, or Power line condition.

To solve the problem, carry out the check item in Step 1, and if the result is the same as that in the result column, carry out the action descrived in the conter measure column. If the result is not the same as that in the result column, proceed the Step 2.

A flowchart representing the above table is given on the next page.

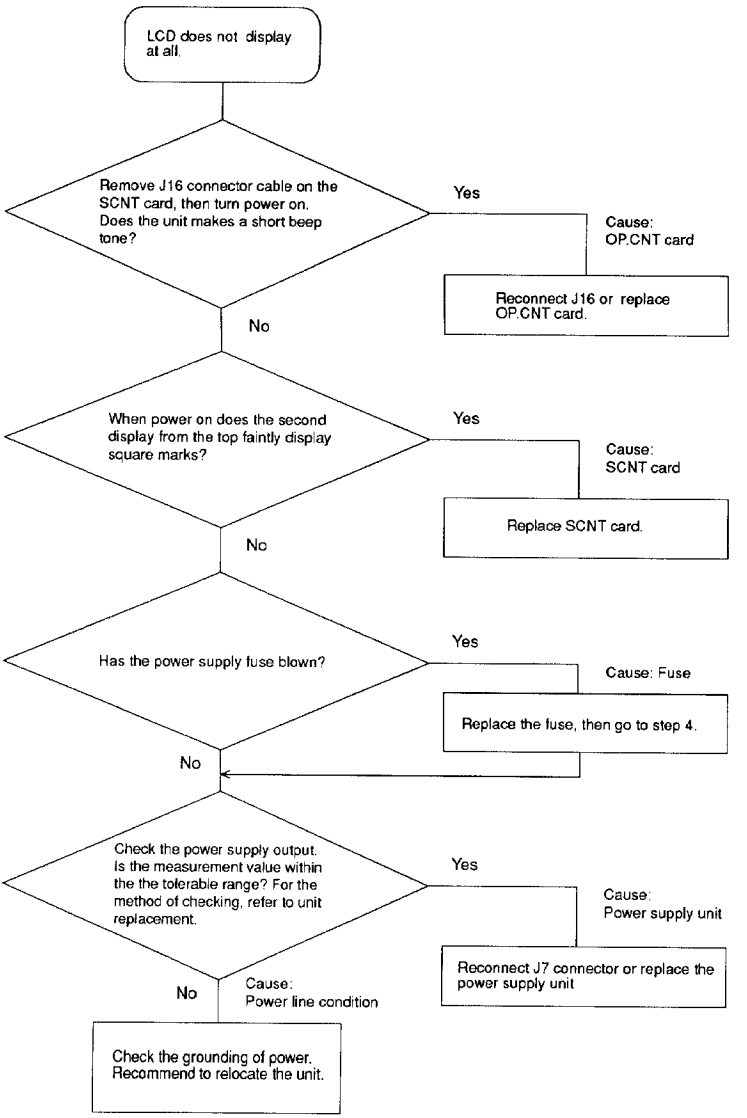

LCD does not display at all.
Remove J16 connector cable on the SCNT card, then turn power on. Does the unit makes a short beep tone?
Yes
Cause: OP.CNT card
Reconnect J16 or replace OP.CNT card.
No
When power on does the second display from the top faintly display square marks?
Yes
Cause: SCNT card
Replace SCNT card.
No
Has the power supply fuse blown?
Yes
Cause: Fuse
Replace the fuse, then go to step 4.
No
Check the power supply output. Is the measurement value within the the tolerable range? For the method of checking, refer to unit replacement.
Yes
Cause: Power supply unit
Reconnect J7 connector or replace the power supply unit
No
Cause: Power line condition
Check the grounding of power. Recommend to relocate the unit.

Fig. 4-3-1

3.1.2. Three-party Communication

When "Carry out the three-party communication" in the Treatment column in the Table of Troubleshooting, carry out the communication test as shown the following figure.

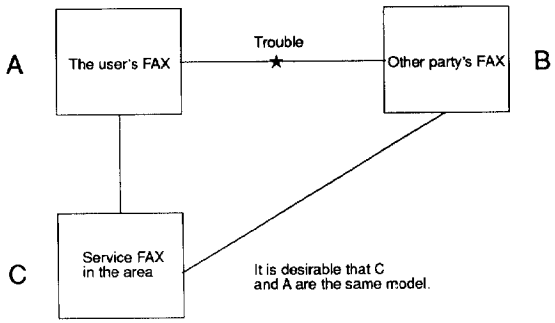


Fig. 4-3-2

(1) When the user's FAX is the receiving party.

Table 4-3-2

Cause	Step	Check Item	Result	Countermeasure
A unit	1	Is the transmission from C to A normal?	No	Since A is defective, check A.
B unit	2	Is the transmission from B to C normal?	No	Since A is defective, check A.
Line			Yes	Since the line is defective, check the line.

(2) When the user's FAX is the transmitting party.

Table 4-3-3

Cause	Step	Check Item	Result	Countermeasure
A unit	1	Is the transmission from A to C normal?	No	Since A is defective, check A.
B unit	2	Is the transmission from C to B normal?	No	Since B is defective, check B.
Line			Yes	Since the line is defective, check the line.

3.2 Display problem

3.2.1 LCD does not display at all.

Table 4-3-4

Cause	Step	Check Item	Result	Countermeasure
OP. CNT card	1	Remove J16 connector cable on the SCNT card, then turn power on. Does the unit makes a short beep tone?	Yes	Reconnect J16 or replace OP. CNT card.
SCNT card	2	When power on, does the second display from the top faintly display square marks?	Yes	Replace SCNT card
Check for branching	3	Has the power supply fuse blown?	Yes	Replace the fuse , then go to step 4
Power supply unit	4	Check the power supply output. Is the measurement value within the the tolerable range? For the method of checking, refer to unit replacement.	No	Replace the power supply unit.
Power line condition			Yes	Check the grounding of power. Recommend to relocate the unit.

3.2.2 LCD displays with problem

Table 4-3-5

Cause	Step	Check	Result	Countermeasure
OP. CNT card	1	Remove J16 connector cable on the SCNT card, then turn power on. Does the unit makes a short beep tone?	Yes	Reconnect J16 or replace OP. CNT card.
SCNT card			No	Replace SCNT card.

3.3 Keys

3.3.1 Keys do not work. (Display is normal)

Table 4-3-6

Cause	Step	Check	Result	Countermeasure
Service protect switch	1	Does the key not work only when Service Switch is registered? (230V model only)	Yes	Turn the service protect switch off.
Key	2	Has the key seized?	Yes	Clean the key. If the operation is still faulty, replace the key.
OP. CNT card	3	Remove J16 connector cable on the SCNT card, then turn power on. Does the unit makes a short beep tone?	Yes	Reconnect J16 or replace OP. CNT card.
SCNT card			No	Replace SCNT card.

3.4 Copy

3.4.1 Cutting when copy function is started. (FP50) Feeding the recording paper during copy. (FP40)

Table 4-3-7

Cause	Step	Check	Result	Countermeasure
Document	1	Is the document set properly?	No	Advice the user to insert the document correctly.
DS	2	Does the DS work properly during the sensor test mode?	Yes	The DS is problem. Reconnect J16 or replace the OP. CNT card.
SCNT card			No	Replace the SCNT card.

3.5 Document feeding

3.5.1 Document is not feed.

Table 4-3-8

Cause	Step	Check	Result	Countermeasure
DS	1	Does the DS work properly during the sensor test mode?	No	The DS is problem. Reconnect J16 or replace the OP. CNT card.
DES	2	Does the DES work properly during the sensor test mode?	No	The DES problem. Reconnect J16 or replace the OP. CNT card.
ADF	3	Do feeding rollers rotate correctly during motor test mode?	Yes	Clean ADF section with isopropyl alcohol or replace ADF section.
Reading gear unit	4	Connect J9 connector cable(White) to J10 connector (Blue) on the SCNT card. Detach the decurl spring from the decurl arm. Open the recording paper cover but set the cover sensor to ON with a substance like paper. Does the cutter rotate during the unit aging test?	No	Reconnect J10 connector or replace reading gear unit. (After this test relocate all connectors to original positions.)
SCNT card			No	Replace SCNT card.

3.5.2 Document feed problem (Multi-feed, skew, etc.)

Table 4-3-9

Cause	Step	Check	Result	Countermeasure
Recording paper cover	1	Is the recording paper cover, closed properly?	No	Close the recording paper cover properly.
ADF	2	Do feeding rollers rotate correctly during unit aging test mode?	Yes	Clean ADF section with isopropyl alcohol or replace ADF section.
Feeder plate spring	3	Does the rear edge of the feeder plate spring tab correctly fit under the tab of the recording paper cover mold?	No	Fit the rear edge of the feeder plate spring tab correctly under the tab of the recording paper cover mold.
Operation			No	Suggest how to set documents correctly.

3.5.3 Document does not stop, but passes through.

Table 4-3-10

Cause	Step	Check	Result	Countermeasure
DES	1	Does the DES work properly during the sensor test in the test mode?	No	The DES is problem. Replace the OP. CNT card.
SCNT card			Yes	Replace the SCNT card.

3.6 Recording Paper Feed problem

3.6.1 Check recording paper is displayed although it is set.

Table 4-3-11

Cause	Step	Check	Result	Countermeasure
Recording paper cover	1	Is the recording paper cover, closed properly?	No	Close the recording paper cover properly.
RPS and CVS unit	2	Does the RPS and CVS work properly during the sensor test in test mode.	No	Reconnect J20 connector on the SCNT card or replace the RPS and CVS unit.
SCNT acrd			Yes	Replace the SCNT card.

3.6.2 Recording paper feed error

See #009 error. (Reference number 3.9.5. and 3.9.6)

3.7 Copy image

3.7.1 All white

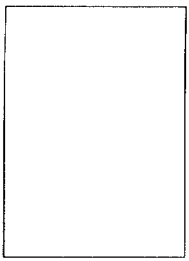


Fig. 4-3-2

Table 4-3-12

Cause	Step	Check	Result	Countermeasure
Recording paper	1	Has the recording paper been set back to front?	Yes	Set the recording paper correctly, and show the user how to do it.
Check for branching			No	Go to next image problem (3.7.3).

3.7.2 All black

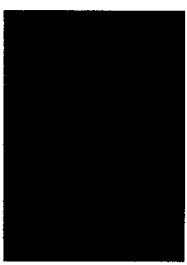


Fig. 4-3-3

Table 4-3-13

Cause	Step	Check	Result	Countermeasure
LED array	1	Does the LED array light on during the CCD test?	No	Reconnect J11 connector on the SCNT card or Replace the LED array.
Check for branching			Yes	Go to next image problem (3.7.3).

3.7.3 Thin black lines, thick black lines, thick white lines

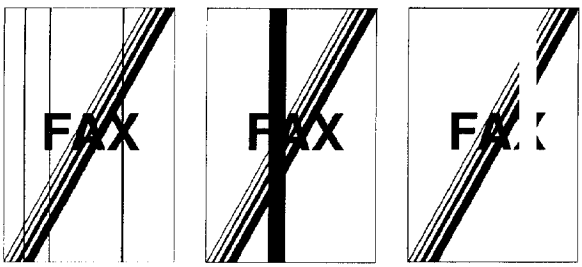


Fig. 4-3-4

Table 4-3-14

Cause	Step	Check	Result	Countermeasure
Thermal head unit	1	Has the print pattern during print test mode normal?	No	Reconnect the thermal head relating connectors or replace thermal head and SCNT card in this order.
Scanning unit			Yes	Reconnect the scanning unit relating connectors or replace scanning unit and SCNT card in this order.

3.7.4 Too light or too dark

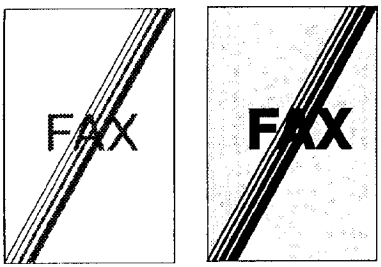


Fig 4-3-5

Table 4-3-15

Cause	Step	Check	Result	Countermeasure
Scanning unit adjustment	1	Is the recording test print during test mode normal?	Yes	Adjust VR1 on the CCD card. Turn clockwise to make lighter image.
Thermal head unit			No	Clean thermal head unit with isopropyl alcohol.

3.7.5 Light and reversed

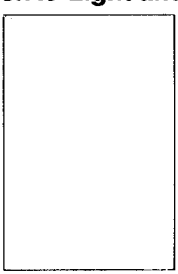


Fig. 4-3-6

Table 4-3-16

Cause	Step	Check	Result	Countermeasure
Recording paper	1	Has the recording paper been set back to front?	Yes	Set the recording paper correctly, and show the user how to do it.
SCNT card			No	Replace the SCNT card.

3.8 Received image

3.8.1 Line missing

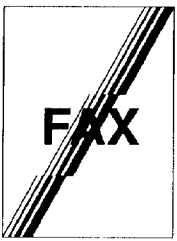


Fig. 4-3-7

Table 4-3-17

Cause	Step	Check	Result	Countermeasure
Telephone line quality	1	Is the copy image normal?	Yes	The line is problem. Ask the other party to retransmit.
Check for branching			No	Refer to " #009 error ".

3.8.2 Blurred image

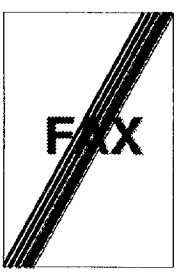


Fig. 4-3-8

Table 4-3-18

Cause	Step	Check	Result	Countermeasure
Line or other facsimile machine	1	Is the copy image normal?	Yes	Request the user of other facsimile to call for service.
SCNT card			No	Refer to " Copy image".

3.9 Communication problem

3.9.1 #001 and #011 Errors Occurs Frequently

Table 4-3-19

Cause	Step	Check	Result	Countermeasure
Recording paper cover	1	Is the recording paper cover, closed properly?	No	Close the recording paper cover properly.
ADF	2	Do feeding rollers rotate correctly during motor test mode?	Yes	Clean ADF section with isopropyl alcohol or replace ADF section.
Feeder plate spring	3	Does the rear edge of the feeder plate spring tab correctly fit under the tab of the recording paper cover mold?	No	Fit the rear edge of the feeder plate spring tab correctly under the tab of the recording paper cover mold.
DS	4	Does the DS work properly during the sensor test mode?	No	The DS is problem. Reconnect J16 or replace the OP. CNT card.
DES	5	Does the DES work properly during the sensor test mode?	No	The DES is problem. Reconnect J16 or replace the OP. CNT card.
Reading gear unit	6	Connect J9 connector cable (White) to J10 connector (Blue) on the SCNT card. Deatach the decurl spring from the decurl arm. Open the recording paper cover but set the cover sensor to ON with a substance like paper. Does the cutter rotate during unit aging test?	No	Reconnect J10 connector or replace reading gear unit. (After this test relocate all connectors to original locations)
SCNT card			No	Replace SCNT card.

3.9.2 #003 Error Occurs Frequently

Table 4-3-20

Cause	Step	Check	Result	Countermeasure
DES	1	Carry out the sensor test. Does DES operate normally?	No	Replace the OP. CNT card.
Cover. ADF	2	Copy the document and check the printed image. Is the image elongated?	Yes	Securely tighten the cover. Clean or replace the roller and separator.
Special document or halftone	3	Is the communication time per page more than 8 minutes?	Yes	Ask the other party to set the maximum communication time per page to 16 minutes and over.
			No	Divide up the document by copying and transmit them, or ask the other party to set the maximum communication time per page to 32 minutes and over.

3.9.3 #005 Error Occurs Frequently.

Table 4-3-21-1/2

Cause	Step	Check	Result	Countermeasure
Setting of Tone/Pulse	1	Check with the local operator whether the dial type is tone or (rotary) pulse. Is setting OK?	No	Reset the dial type.
SCNT card	2	Check the dial sound when the line is actually connected to the actual telephone line by a line monitor tool such as a crystal earphone. Is the dial sound normal? (For both the tone and pulse types)	No	Replace the SCNT card.
	3	Check the receiving sound by a line monitor tool such as a crystal earphone. When a document is transmitted from a nearby FAX, are the CED and DIS signals sent?	No	
	4	Check the transmitting sound by using a line monitor tool such as a crystal earphone. When a document is transmitted to a nearby FAX, are the DCS and training sound sent?	No	
Other Party	5	Manually dial the other party's telephone number and check the other party's sound with your own ears. Is the other party a G3 FAX?	No	Explain to the user that the other party is not the G3 FAX.
Line noise	6	Is the line noise low?	No	Let the user listen to the line noise, and have him contact the telephone company.

Table 4-3-21-2/2

Cause	Step	Check	Result	Countermeasure
T1 time over	7	Check the communicating sound by a line monitor tool such as a crystal earphone. Have more than 40 seconds passed until the CED and DIS of the other party's FAX are sent after dial?	Yes	Add a few pauses in the registered dial number.
Special line, PBX	8	Is it a special line (PBX) which requires a prefix number or password?	Yes	Mix the pause key and tone key well with the dial number to match the dial with the input timing of password, etc.
Compatibility trouble	9	Does this trouble occurs when receiving multiple documents?	Yes	Contact the service center.
Echo trouble			No	Set Service Switch so as to send 1100 Hz before CED.

3.9.4 #008 Error Occurs Frequently.

Table 4-3-22

Cause	Step	Check	Result	Countermeasure
Unmatching polling IDs	1	Is the other FAX a Canon FAX?	Yes	Contact the other party to match the polling ID.
Other company			No	Set the polling ID to all "1".

3.9.5 #009 Error Occurs Frequently (In the case of FP40)

Table 4-3-23

Cause	Step	Check	Result	Countermeasure
Cover	1	Check whether the cover is securely closed.	No	Close the cover.
CVS (Cover sensor)	2	Carry out the sensor check	No	Replace the sensor card unit.
Recording Gear Unit	3	Connect J9 connector cable (White) to J10 connector (Blue) on the SCNT card. Deatach the decurl spring from the decurl arm. Open the recording paper cover but set the cover sensor to ON with a substance like paper. Does the cutter rotate during unit aging test?	Yes	Replace the recording gear unit. (After this test relocate all connectors to original locations)
SCNT Card			No	Replace the SCNT card.

3.9.6 #009 and #042 Errors Occurs Frequently (In the case of FP50)

Table 4-3-24

Cause	Step	Check	Result	Countermeasure
Cover	1	Check whether the cover is securely closed.	No	Close the cover.
CVS	2	Carry out the sensor check	No	Replace the sensor card unit.
CPS (Cutter home Position Sensor)	3	Carry out the sensor check. Is the CPS normal?	No	Replace the CPS.
Platen roller	4	Does the recording paper easily wrap around the platen roller?	Yes	Apply baby (talcum) powder on the platen roller.
Cutter	5	Does the jam occur at the cutter?	Yes	Clean the cutter or replace the cutter.
Recording paper holder	6	There are many cases to receive relatively short documents and the documents exceeding 10 pages.	Yes	Inform the user to use the unit by opening the recording paper holder.
Recording Gear Unit	7	Connect J9 connector cable (White) to J10 connector (Blue) on the SCNT card. Deatach the decurl spring from the decurl arm. Open the recording paper cover but set the cover sensor to ON with a substance like paper. Does the cutter rotate during unit aging test?	Yes	Replace the recording gear unit. (After this test relocate all connectors to original locations)
SCNT Card			No	Replace the SCNT card.

3.9.7 #012 Error Occurs Frequently

Table 4-3-25

Cause	Step	Check	Result	Countermeasure
Other Party	1	Call the other party, and check whether the other party's FAX is ready to receive the communication.		Ask the other party to set the recording paper.

3.9.8 ##100 Error Occurs Frequently

Table 4-3-26

Cause	Step	Check	Result	Countermeasure
Echo	1	Does the error occurs before the image is transmitted?	Yes	Turn ON the error-preventing bit when registering the dial.
Other cause.			No	Proceed to the item of ##109.

3.9.9 ##100, ##104 Error Occurs Frequently

Table 4-3-27

Cause	Step	Check	Result	Countermeasure
ATT. NL	1	Does the error occurs after the image is transmitted?	Yes	Adjust ATT and NL.
Other Party	2	Is there no effect after carrying out the treatment in 1, and does the error occurs only when the communication is long?	Yes	Ask the other party to set a long communication time per page.
The modem of the receiving FAX is dispersed.	3	When there is no effect after the steps in 2 and 3 are conducted, and the receiving FAX is a Canon unit.	Yes	Prohibit CBT.
	4	When there is no effect after conducting the steps in 1 through 3.	Yes	Adjust the no sound time after CFR by Service Switch.
	5	When there is no effect after conducting the steps in 2 through 4.	Yes	Lower the transmitting speed.
	6	When there is no effect after conducting the steps in 2 through 5.	Yes	Request to adjust the echo monitor time after CFR to other.
	7	When there is no effect after conducting the steps in 2 through 6, and when you wish to decrease at least ##104 error only.	Yes	Request the adjustment of the RTN transmitting condition of the receiving FAX.
Line quality	8	Contact the service center or telephone company to check for the line quality. Does the line have good condition?	No	Request the maintenance of the line.
Unknown			Yes	Record the sound in the DAT recorder and send it to the service center.

3.9.10 ##102 Error Occurs Frequently

Table 4-3-28

Cause	Step	Check	Result	Countermeasure
SCNT	1	Does the error occurs always?	Yes	Replace the SCNT.
ATT. NL	2	Manually dial and check the other FAX's sound. Is the sound low?	Yes	Adjust ATT and NL.
Line quality	3	Contact the service center or telephone company to check the line quality. Is the line in good condition?	No	Request the line maintenance.
Unknown			Yes	Record the sound in the DAT recorder and send it to the service center.

3.9.11 ##103, ##106, ##114, ##264 Error Occurs Frequently

Table 4-3-29

Cause	Step	Check	Result	Countermeasure
Echo	1	Are you receiving many overseas receptions ?	No	Add 1100 Hz before CED by using Service Switch. Adjust ATT and lower the output.
Line	2	When the recording operation stops during reception, immediately pick up the receiver, press the stop key, and check the receiving level. Is the receiving level low? (At this time, the transmitting FAX makes an error. Do this operation after reporting on this operation to the transmitting party.)	No	Request the transmitting party to increase the output level.
Adjustment of the modem	3	Is there no effect even if the steps 1 and 2 are carried out?	No	Adjust the echo monitoring time after sending CFR by using Service Switch.
Line quality	4	Is there no effect even if the steps 1 through 3 are carried out?	Yes	Slow the receiving speed.
Line quality	5	Contact the service center or telephone company to check the line quality. Does the line have good condition?	No	Request the line maintenance.
Unknown			No	Record the sound in the DAT recorder and send it to the service center.

3.9.12 ##107 Error Occurs Frequently

Table 4-3-30

Cause	Step	Check	Result	Countermeasure
Echo	1	Do you have many overseas receptions ?	Yes	Add 1100 Hz before CED by using Service Switch. Adjust ATT and lower the output.
Line quality	2	When the recording operation stops during reception, immediately pick up the receiver, press the stop key, and check the receiving level. Is the receiving level low? (At this time, the transmitting FAX makes an error. Do this operation after reporting on this operation to the transmitting party.)	Yes	Request the transmitting party to increase the output level.
Adjustment of the modem	3	Is there no effect even if the steps 1 and 2 are carried out?	Yes	Adjust the echo monitoring time after sending CFR by using Service Switch.
Line quality	4	Contact the service center or telephone company to check the line quality. Does the line have good condition?	No	Request the line maintenance.
Unknown			Yes	Record the sound in the DAT recorder and send it to the service center.

3.9.13 ##109 Error Occurs Frequently.

Table 4-3-31

Cause	Step	Check	Result	Countermeasure
T1 time out on the receiving FAX	1	Is it manually transmitted?	Yes	Start transmission when CED, DIS is heard.
The receiving FAX is using an original mode	2	Contact the service center and request it to carry out the communication test. Does the trouble recur?	Yes	The service center and the user should contact the other party to solve the trouble.
Unknown			No	Record the sound in the DAT recorder and send it to the service center.

3.9.14 ##200, ##201, ##289, ##290 Error Occurs Frequently.

Table 4-3-32

Cause	Step	Check	Result	Countermeasure
Other Party's FAX	1	Contact the other party. Did the operator press the stop key or turn OFF the power switch?	Yes	Inform the user that the unit does not have a trouble.
Compatibility trouble	2	Contact the service center and request it to carry out a communication test. Does the trouble recur?	Yes	The service center and the user should contact the other party to solve the trouble.
Unknown			No	Record the sound in the DAT recorder and send it to the service center.

3.9.15 ##511 Error Occurs

Table 4-3-33

Cause	Step	Check	Result	Countermeasure
OP.CNT card or SCNT card	1	Is the conbination of the SCNT card part number and the OP.CNT card part number correct for your model?	Yes	Replace the OP.CNT or the SCNT card to correct one.

3.10 FAX/TEL Auto switch problem with Answering machine

3.10.1 Answering machine won't answer

Table 4-3-34

Cause	Step	Check	Result	Countermeasure
Line connection	1	Does an Answering machine connect the middle modular jack of the unit?	No	Connect correctly.
Operation	2	Does the LCD shows ⌂ : (ANS.) mark?	No	Press "ANS HOOK UP" key.
User Switch setting	3	Is the User Switch SW1 bit 1 to "1"?	No	Set User Switch SW1 bit 1 to "1".
Matching with Answering machine			Yes	Some Answering machine doesn't match with FP40/50.

3.10.2 FAX won't answer with Answering machine

Table 4-3-35

Cause	Step	Check	Result	Countermeasure
Line connection	1	Does the Answering machine connect the middle modular jack of the unit?	No	Connect correctly.
Operation	2	Does the LCD shows ⌂ : (ANS.) mark?	No	Press "ANS HOOK UP" key.
User Switch setting	3	Is the User Switch SW1 bit 1 to "1"?	No	Set User Switch SW1 bit 1 to "1".
Manual transmis-sion	4	Can you hear the CNG from the Answering machine's monitor?	No	Request transmitter side to use automatic transmission mode.
TX fax stops to generate CNG when it detects carrier	5	Can you hear the CNG from the Answering machine during OGM?	No	Make silence 7 seconds in front of OGM when the costomer record OGM.
Matching with Answering machine			Yes	Some Answering machine doesn't match with FP40/50.

3.10.3 FAX starts receive during remote control of an Answering machine

Table 4-3-36

Cause	Step	Check	Result	Countermeasure
CNG in Incoming message	1	Does the Answering machine record CNG tone twice or more?	Yes	Make silence 7 seconds in front of OGM when the costomer record OGM.

4 CLEARING RECORDING PAPER JAMS (FP50)

4.1

Open the recording paper cover.
First press the cover release button.
Then raise the cover.

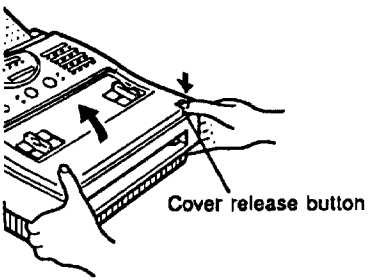


Fig. 4-4-1

4.2

Remove the recording paper.

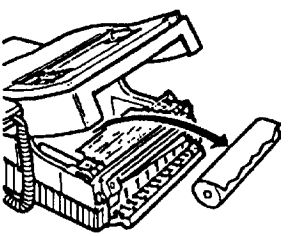


Fig. 4-4-2

4.3

Remove the jamming paper.

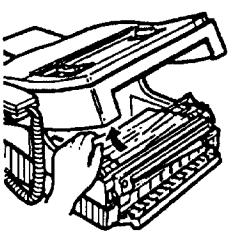


Fig. 4-4-3

4.4

Remove the Lever from the storage position. Fit the Lever around the shaft.

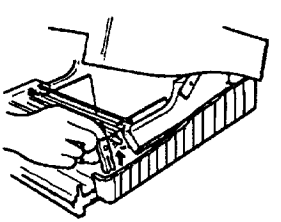


Fig. 4-4-4

4.5

Turn the Lever to clear jam. Please do not turn the Lever strongly.

When the beeping sounds ceases, stop turning the shaft.

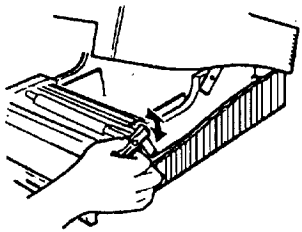


Fig. 4-4-5

4.6

If it is difficult to remove jamming paper use the Lever to push the cutter like a figure.

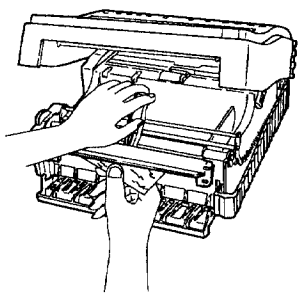


Fig. 4-4-6

4.7

Remove the Lever from the shaft and return it to the storage position.

4.8

Load the recording paper.

5 UNIT REPLACEMENT / ADJUSTMENT

This flow shows a relation of disassembly sections and page numbers for your benefit.

5.1 Basic disassembly P 4-36
- 5.3 Decurl Unit (FP50) P 4-38
  - 5.4 Platen Roller Unit P 4-39
- 5.6 Document feed Rollers P 4-41
- 5.7 Thermal Head Unit P 4-43
- 5.8 OPCNT Card Unit P 4-45
  - 5.9 ADF P 4-46

5.1.1 Basic disassembly 1 P 4-36
- 5.5 LED Array P 4-40
- 5.12 Power Supply Unit P 4-48
- 5.13 Reading Gear Unit P 4-49
  - 5.14 Recording Gear Unit P 4-50
- 5.15 Scanning Unit P 4-51

5.1.2 Basic disassembly 2 P 4-36
- 5.10 SCNT Card Unit P 4-47
- 5.11 Main ROM P 4-47

5.2 Cutter Unit (FP50) P 4-37

5.1 Basic Disassembly

Before disassembling the machine, always unplug the power cord from the socket.

5.1.1 Basic disassembly 1

1. Disconnect all modular cords.

2. Open the recording paper cover, and remove the green stay rod. (Remove a screw)

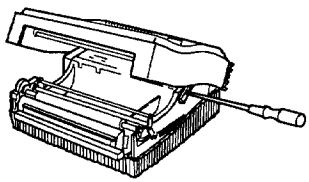


Fig. 4-5-1

3. Stand the recording paper cover upright, and remove it to the upper side. Keep the recording paper upright as it is, and place it to the back side of the unit.

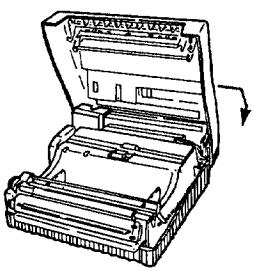


Fig. 4-5-2

5.1.2 Basic disassembly 2

1. Stand the unit with the recording paper cover being closed.

2. Open the base cover. (Remove 2 screws)

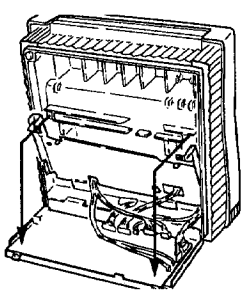


Fig. 4-5-3

5.2 Cutter Unit (FP50)

5.2.1 Removal procedure

1. Open the recording paper cover. Remove the screw of the Cutter cover 2 (HA2-1215-000).

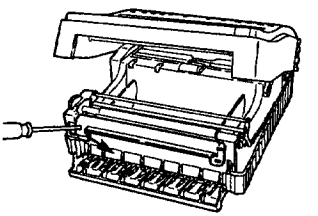


Fig. 4-5-4

2. Slightly bend the left hook to the inside, and remove the cover from the left side.

3. Remove the Cutter cover 1 (HA2-1214-000).

   Remove the Cutter unit.

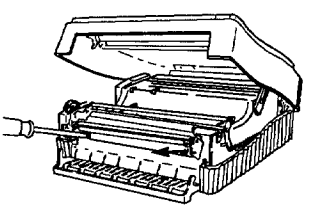


Fig. 4-5-5

5.3 Decurl Unit (FP50)

5.3.1 Removal procedure

1. Conduct the basic disassembly 1.

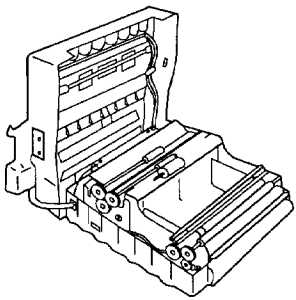


Fig. 4-5-6

2. Remove the recording gear cover.
   (Remove a screw)

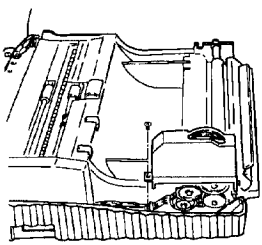


Fig. 4-5-7

3. Remove the decurl spring.

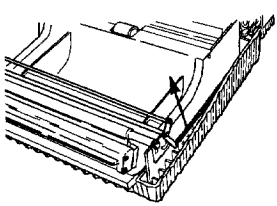


Fig. 4-5-8

4. Expand the right arm, rotate the arm to the rear direction up to the horizontal position, and pull it out to the upper side.

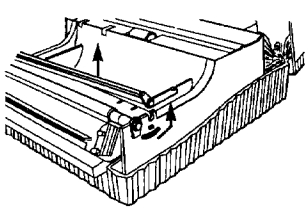


Fig. 4-5-9

5.3.2 Installation procedure

Mount this unit in the order opposite to the order of removal. Carefully install the recording gear cover. When it doesn't fit correctly the recording cover doesn't close.

5.4 Platen Roller Unit

5.4.1 Remove procedure

1. In the case of FP50, first remove the decurl unit. (Refer to section 5.3)

2. Remove the right platen roller bushing, rotate the bushing to the side, and remove its left side.

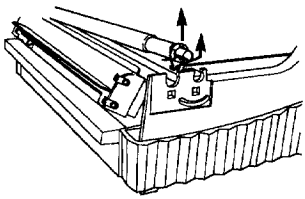


Fig. 4-5-10

3. Slightly slide the platen roller to the left side.

4. Pull out the platen roller to the upper side by utilising the clearance between the collar and roller.

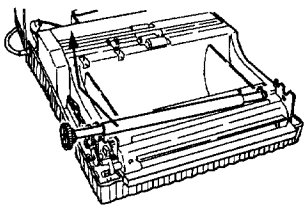


Fig. 4-5-11

5.4.2 Installation procedure

Mount this unit in the order opposite to the order of removal.

5.5 LED Array

5.5.1 Removal procedure

1. Conduct the disassembly 1

2. Conduct the disassembly 2.

3. Remove the J11 connector on the SCNT card.

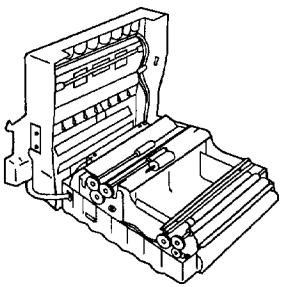


Fig. 4-5-12

4. By expanding the hooks on both sides which hold the document glass to the rear side, remove the document glass.

5. Pry with the flat bladed screw-driver, and peel off the LED array from the mold. Remove the glue well.

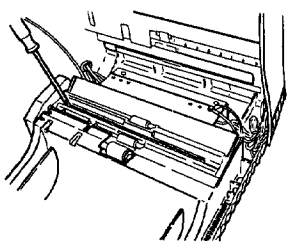


Fig. 4-5-13

5.5.2 Installation procedure

1. Mount this unit in the order opposite to the order of removal.

2. Please stick on the LED array exactly center of the 2 marks.

3. After mounting its needed to adjust VR1 volume on the CCD card unit. Please refer to the scanning unit replacement for details. (Fig. 4-5-41)

5.6 Document feed Rollers

5.6.1 Removal procedure

1. Carry out the basic disassembly 1.

2. Attach the precision screwdriver to the lower side of the right shaft, and remove the shaft with the separation roller from the frame mold by levering.

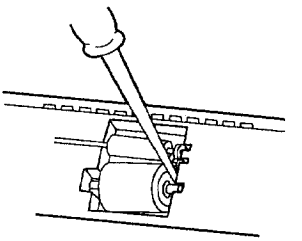


Fig. 4-5-14

3. Remove the reading gear cover.

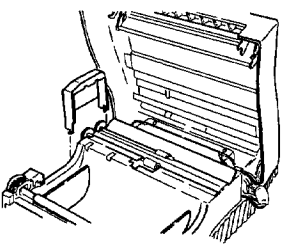


Fig. 4-5-15

4. Carefully remove the roller so as not to break the hook on the left side. Attach the flat bladed screwdriver below the hook, and bring it up.

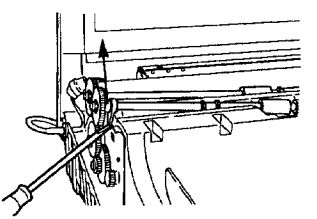


Fig. 4-5-16

5. If replacing Z13D gear (HS1-0297-000), attach the precision screwdriver to the lower side of the right shaft, and remove the gear from the frame mold by levering.

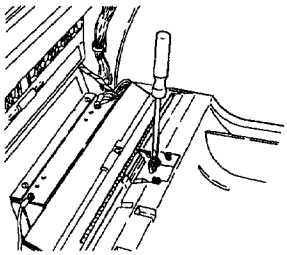


Fig. 4-5-17

5.6.2 Installation procedure

Mount these units in the order opposite to the order of removal.

5.7 Thermal Head Unit

5.7.1 Removal procedure

1. Conduct the basic disassembly 1.

2. Extend the guide shaft holder to the outside, and remove the guide shaft.

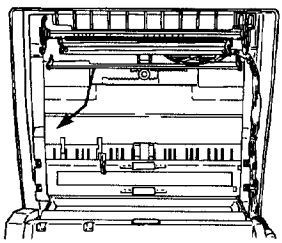


Fig. 4-5-18

3. Extend the left hook holding the thermal head unit, and remove it from the left side. Be careful not to break the Lock arm.

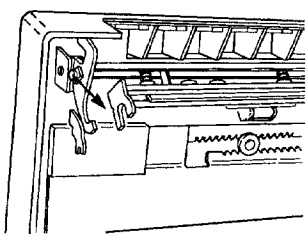


Fig. 4-5-19

4. Remove the thermal head unit from the right side in the same manner.

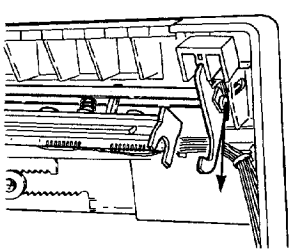


Fig. 4-5-20

5. Open out the hook of the recording paper cover, and remove the Thermal head unit with the Lock bar and Thermal head holder.

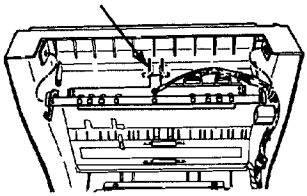


Fig. 4-5-21

(Do not remove the Thermal head holder from the Thermal head)

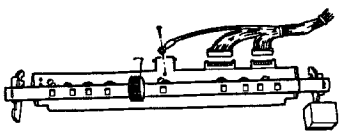


Fig. 4-5-22

5.7.2 Installation procedure

Mount this unit in the order opposite to the order of removal. (Lock spring must be fixed securely)

5.8 OPCNT Card Unit

5.8.1 Removal procedure

1. Conduct the basic disassembly 1.

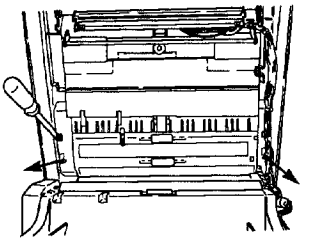


Fig. 4-5-23

2. Remove 2 Stoppers of the Operation panel unit with a precision screwdriver, remove the Operation panel unit from the top cover by lifting up the rear edge.

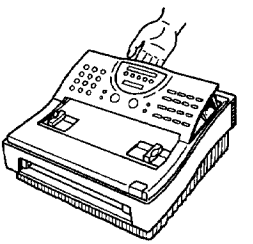


Fig. 4-5-24

3. Conduct the basic disassembly 2.

4. Remove J16 from SCNT card.

5. Remove the OP.CNT card unit. (Remove 11 screws) Do not remove the screw for DES.

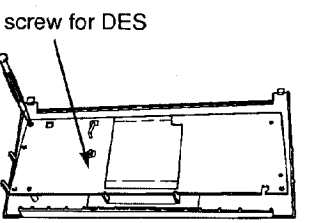


Fig. 4-5-25

5.8.2 Installation procedure

Mount this unit in the order opposite to the order of removal.

5.9 ADF

5.9.1 Removal procedure

1. Conduct the basic disassembly 1.

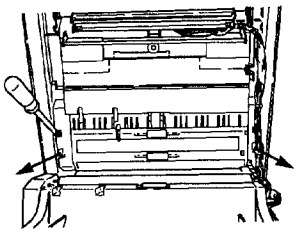


Fig. 4-5-26

2. Remove 2 stoppers of the Operation panel unit with a precision screwdriver, and remove the Operation panel unit from the top cover by lifting up the rear edge.

3. Remove the Operation panel unit.

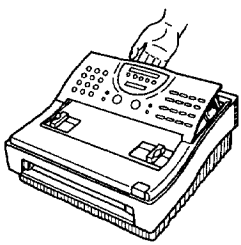


Fig. 4-5-27

4. Remove the ADF-related parts.

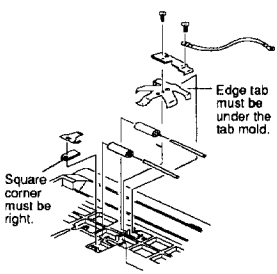


Fig. 4-5-28

5.9.2 Installation procedure

Mount this unit in the order opposite to the order of removal. Carefully mount the feeder plate spring correctly and the separation guide. If you do not, the ADF will not work properly.

5.10 SCNT Card Unit

5.10.1 Removal procedure

1. Conduct the basic disassembly 2. (Remove 2 screws)

2. Remove all the connectors on the SCNT card, and remove the SCNT card from the bottom plate.
   (Remove 3 screws)

5.11 Main ROM

5.11.1 Removal Procedure

1. Conduct the basic disassembly 2. (Remove 2 screws)

2. Carefully remove the ROM (IC4) from the SCNT with a precision screwdriver so as not to break its pattern.

5.12 Power Supply Unit

5.12.1 Removal procedure

1. Conduct the basic disassembly 2. (Remove 2 screws)
2. Use a digital tester to check each pin of connector J7 on the SCNT card to make sure the power supply output voltage is within tolerance. (Execute print test mode to check)

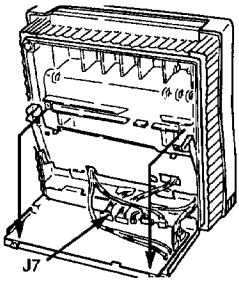


Fig. 4-5-29

Table 4-5-1

Connector	Pin #	Output volt.	Tolerance
J7	1	+ 5 V	+4.75 ~ +5.25
	2	DGND	
	3	+ 12 V	+11.4 ~ +12.6
	4	– 12 V	–11.4 ~ –12.6
	5	AGND	
	6	+ 24 V	+22.8 ~ +25.2
	7	24V GND	
	8	Control	

3. When the voltage output is not as indicated above, the power supply unit is defective. In which case, replace the power supply unit.

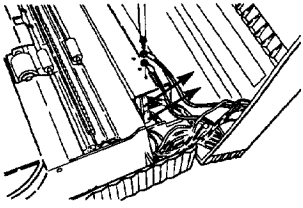


Fig. 4-5-30

4. Conduct the basic disassembly 1.
5. Remove the two GND line and two connectors from the power supply unit and power supply cover. (Remove a screw)
6. Remove the power supply unit. (Remove 2 screws)
7. Remove two pieces of plate from the power supply unit.

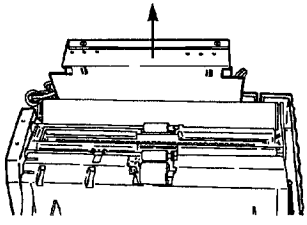


Fig. 4-5-31

5.12.2 Installation procedure

Mount this unit in the order opposite to the order of removal.

5.13 Reading Gear Unit

5.13.1 Removal procedure

1. Conduct the basic disassembly 1.
2. Remove the power supply cover and left power supply unit fixing screw.

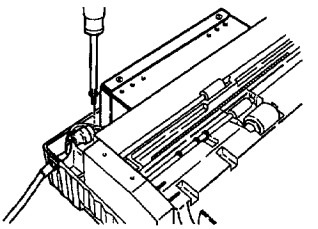


Fig. 4-5-32

3. Conduct the basic disassembly 2. (Remove 2 screws)
4. Remove the J19 (FP50 only) , J10, and J9 connectors.
5. Remove the Noise shield plate. (Remove a screw)

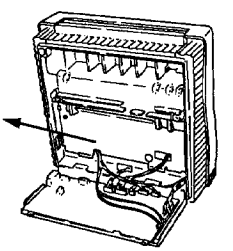


Fig. 4-5-33

6. Remove the bundled cords from the bundled cord holder.
7. Remove the reading gear cover. Remove the delivery roller (HA2-1208-000) and feed roller (HA2-1260-000).
8. Lift up the reading gear holding tab, and remove the reading gear unit.

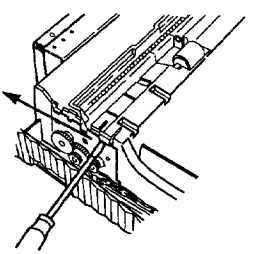


Fig. 4-5-34

5.13.2 Installation procedure

Mount this unit in the order opposite to the order of removal.

5.14 Recording Gear Unit

5.14.1 Removal procedure

1. Remove the reading gear unit.
   (Refer to 5.13)

2. Remove the recording gear cover.
   (Remove a screw)

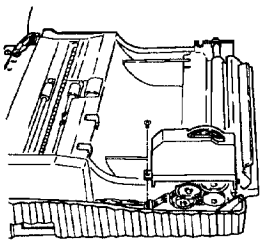


Fig. 4-5-35

3. Remove the decurl unit and platen roller.
   (Refer to section 5.3 and 5.4)

4. Remove the RPS cover and Recording paper sensor.

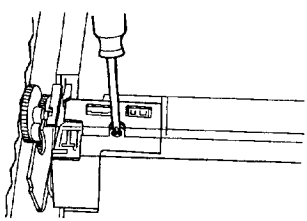


Fig. 4-5-36

5. Remove the Cutter unit.
   (Refer to section 5.2)

6. Remove the recording gear unit.
   (Remove a screw)

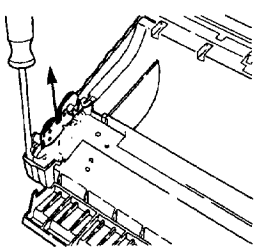


Fig. 4-5-37

5.14.2 Installation procedure

Mount this unit in the order opposite to the order of removal. Carefully mount the recording gear cover correctly. If do not the recording cover doesn't close.

3.15 Scanning Unit

3.15.1 Removal procedure

1. Conduct the basic disassembly 1.

2. Remove the Cover, power supply and power supply unit fixing screw.

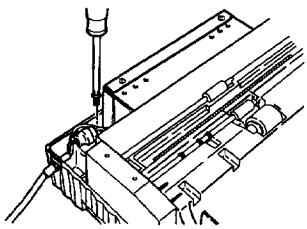


Fig. 4-5-38

3. Conduct the basic disassembly 2. (Remove 2 screws)

4. Remove CN17 from SCNT, and remove the noise shield plate. (Remove a screw)

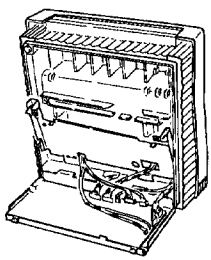


Fig. 4-5-39

5. Extend the scanning unit fixing hook to the outside, and remove the scanning unit.

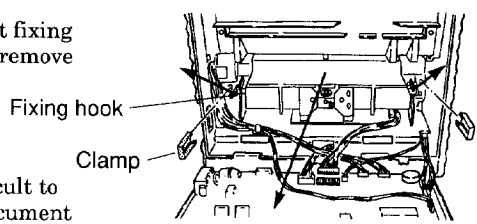


Fig. 4-5-40

If the fixing hook is difficult to open out, remove the Document glass and remove the Clamps by opening out the plastics tabs. Then open out the fixing hook.

5.15.2 Installation procedure

1. Mount this unit in the order opposite to the order of removal. (Having replaced the Clamps, make sure that the tabs are securely fastened)

2. After replacement of the scanning unit or LED array adjust the VR1 on the CCD card unit by means of following table. The LED array has five brightness level. On the LED array there is four digit character mark for checking. First three characters are a lot number and last digit is the brightness level. Please adjust VR1 depend upon the level with figure 4-5-41.

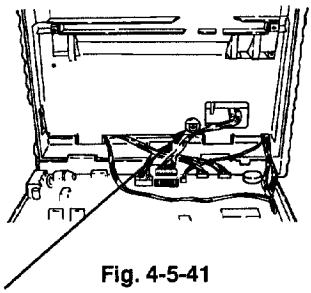
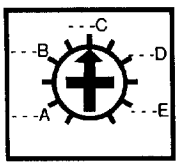


Fig. 4-5-41



CHAPTER 5

MAINTENANCE

1 PERIODIC INSPECTION

1.1. Cleaning Items

1. Cleaning of the document glass. Open the recording paper cover, and wipe the document glass with isopropyl alcohol, etc.

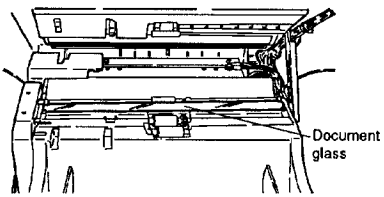


Fig. 5-1-1

2. Cleaning of the ADF parts. Wipe the rollers of the ADF parts with isopropyl alcohol, etc.

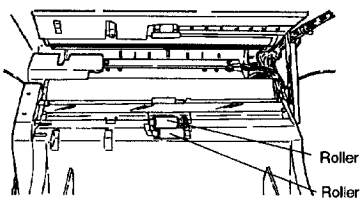


Fig. 5-1-2

3. Cleaning of the Mirror. Remove the scanning unit (See CHAPTER 4), and remove the dust from the mirror with the blower brush. Lightly wipe off the any remaining dust with the lint free paper soaked with isopropyl alcohol. At this time, be careful not to damage the mirror. Wiping it many times may damage it.

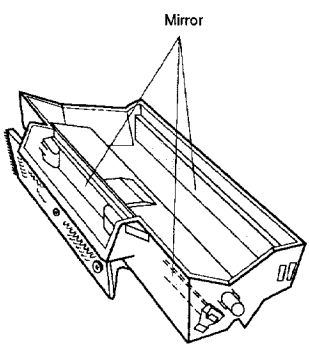


Fig. 5-1-3

1.2 Check of the Cutter (FP50)

Check to be sure that there is no piece of paper around the cutter, and clean any dust stikking on the cutter blade.

* If scraps of recording paper, dust, etc. are attached around the cutter, it may cause the recording paper to jam.

* When the cutter is halfway through cutting, and the recording paper cannot be passed through it, turn the power OFF/ON or press the [START/COPY] key without paper to reset the cutter position.
  Make sure the recording paper cover is closed at this time.
  The cutter position can also be reset by fitting the Lever (HA2-1306-000) to the praten roller shaft and turning.

2 EXPENDABLE PARTS

Parts	Life of Parts and Purpose of Replacement
LED Array HH7-1720	500 hours and over
Thermal Head Unit HG1-3379	Running distance: 15km, No.of printings: 50,000 sheets (LTR)
Cutter Unit (FP50) HA2-1204	30,000 cutting and over
Separation Guide HA2-1228	When the separating performance of ADF has deteriorated, and it does not improve with cleaning.
Separation Roller HA2-1209	

CHAPTER 7

APPENDIX

1 BLOCK DIAGRAM

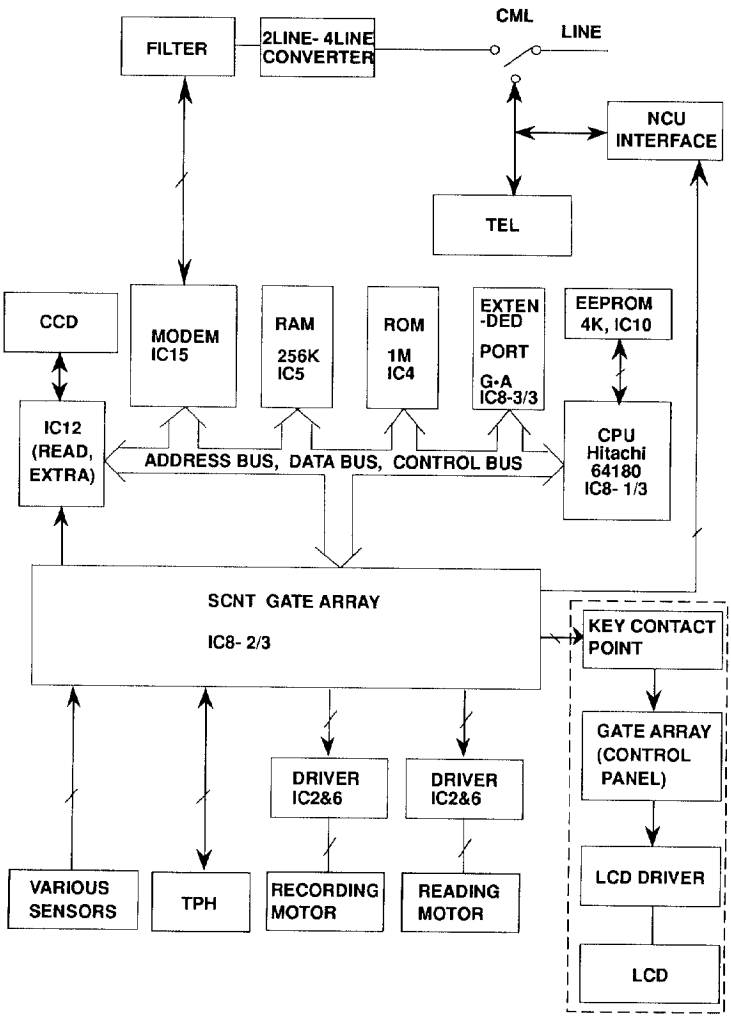


Fig. 7-1-1

2 SENSORS

2.1 Sensor Illustration

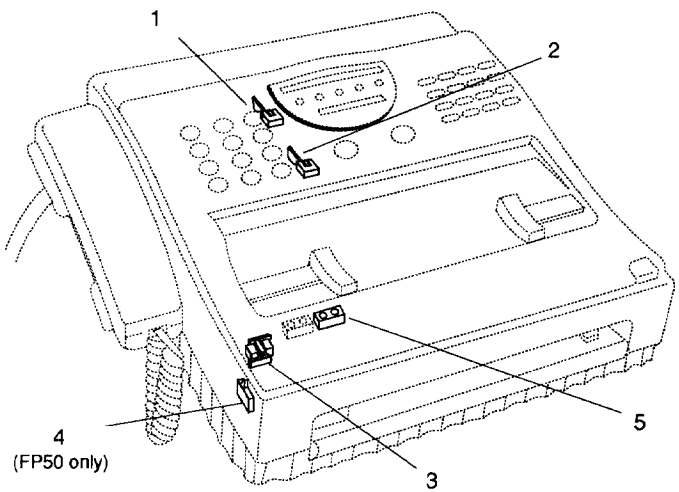


Fig. 7-2-1

Table 7-2-1

Illustration #	Sensor name	Abbreviation	Part No.	Sensor type
1	Doc. edge sensor	DES	—	Photo interrupter
2	Doc. Sensor	DS	—	Photo interrupter
3	Rec. paper cover sensor	CVS	HG1-3378	Photo interrupter
4	Cutter position sensor	CPS (CUT)	HH7-1718	Micro switch
5	Rec. paper sensor	RPS	HG1-3378	Photo reflector

2.2 Sensor output check

2.2.1 Sensor check in the test mode

A check can be performed on each sensor in the test mode (selected with Service Switch) to verify that the correct LCD message is shown for each sensor operation.

2.2.2 Using a tester to check output

Use the digital tester to check the output level of each check point shown in the table below.

Note: When checking output levels with a tester, be careful not to short circuit patterns or elements.

Table 7-2-2

No.	Sensor	Tester probe	LCD	Output level
1	DES	OP. CNT card IC1-60pin	ON	H
			OF	L
2	DS	OP. CNT card IC1-62pin	ON	H
			OF	L
3	CVS	SCNT card IC8-64pin	ON	L
		(or J20-4pin)	OF	H
4	CPS	SCNT card IC8-94pin	ON	H
	(CUT)	(or J19-1pin)	OF	L
5	RPS	SCNT card IC1-1pin	ON	L
		(or R42)	OF	H

Note: Use digital ground for checking